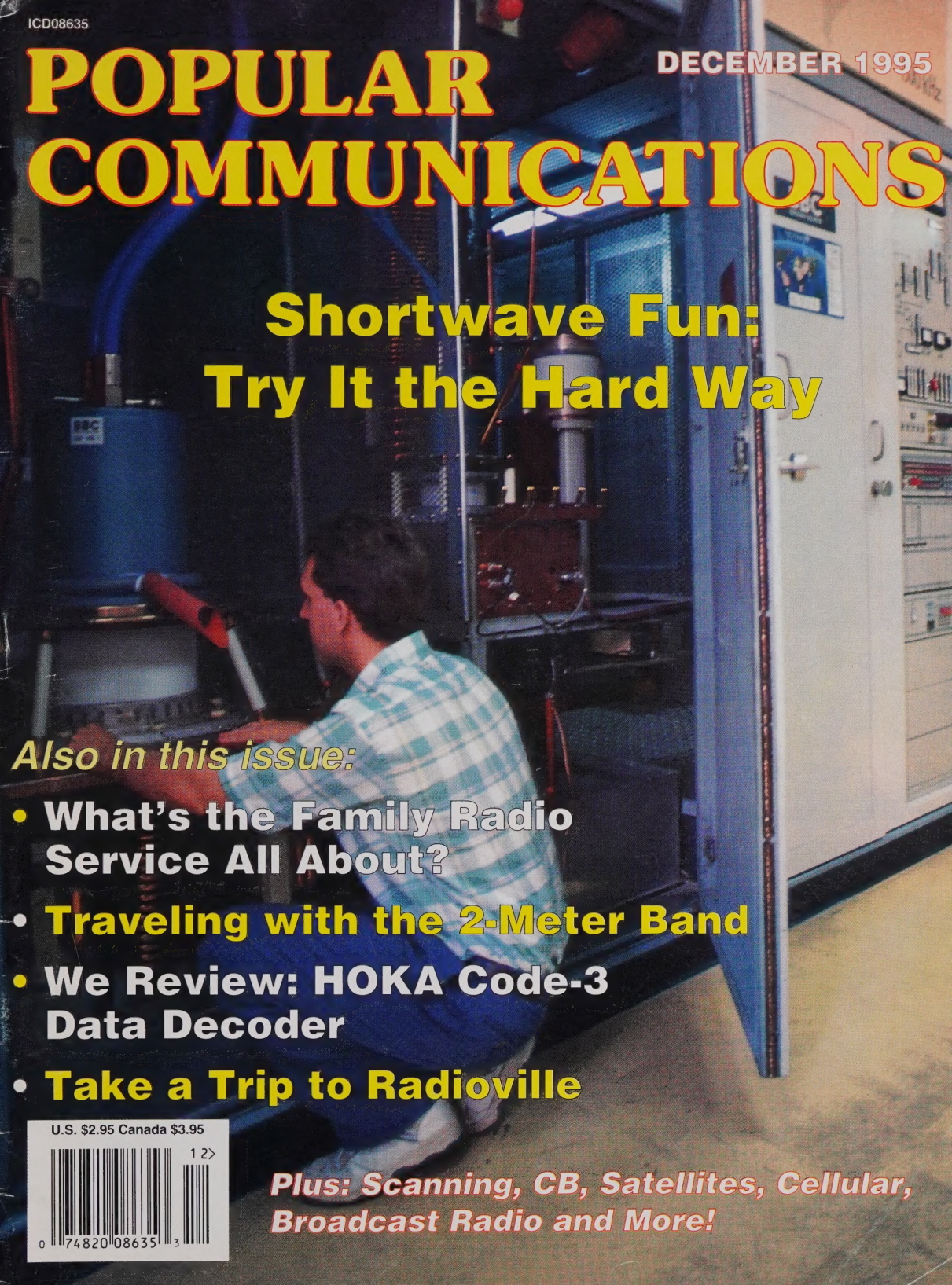
ICD08635

POPULAR COMMUNICATIONS

DECEMBER 1995



Shortwave Fun: Try It the Hard Way

Also in this issue:

- What's the Family Radio Service All About?
- Traveling with the 2-Meter Band
- We Review: HOKA Code-3 Data Decoder
- Take a Trip to Radioville

U.S. $2.95 Canada $3.95

12

0 74820 08635 3

Plus: Scanning, CB, Satellites, Cellular, Broadcast Radio and More!

The AR5000 CyberScan Crushes the Competition!

AOR, LTD.
Tokyo 111 Japan
(c) 1995 AOR, LTD.
Licensed under
US. Pat. 4,270,217

THE NEXT GENERATION OF SCANNING RECEIVER!
There's never been anything like it before.

- World's widest coverage receiver
- State-of-the-Art receiver technology at its most affordable
- Varactor tuned front end provides excellent overload characteristics
- Total computer control for today's demanding PC users and SDU5000 applications
- 7 I.F. filters - 3, 6, 15, 40, 110, 220kHz, and optional 500Hz
- All mode AM, FMN, FMW, LSB, USB, RTTY, CW
- Triple conversion for high image rejection
- 1000 memories; 10 banks of 100 channels
- 2 Antenna inputs • Antenna attenuator • 12VDC 1 amp
- Size: 8.5w x 3.5h x 10d • Weight: <10lbs.
- 120VAC supply included

See the Spectacular AR5000 at Your Favorite Dealer!

Electronic Distributors Inc.
325 Mill St. • Vienna, VA. 22180
Phone: (703) 938 8105 FAX: (703) 938 4525

EDCO

CIRCLE 115 ON READER SERVICE CARD

HAPPY HOLIDAY SPECIALS... from the NEW EEB!!

25th

SCANNERS

AOR	AR2700	$399.95
AOR	AR8000	$599.95
AOR	AR3000A	$1029
AOR	SDU5000	$995.95
AOR	AR5000	$CALL
Bearcat	BCT7	$169.95
	BC120XLT	$179.95
	SC150Y/B	$169.95
	BC220XLT	$224.95
	BC890XLT	$229.95
	BC3000XLT	$369.95
New Low Price	BC9000XLT	$369.95*
Radio Shack	PRO26	$339.95
	PRO46	$179.95*
	PRO60	$299.95
	PRO2039	$229.95*
	PRO2040	$219.95*
	PRO2042	$429.95*

PORTABLE SHORTWAVE

GRUNDIG	YB305	$129.95*
	YB400	$179.95
	SAT700	$459.95
SANGEAN	ATS202	$89.95
	ATS303	$89.95
	ATS606	$149.95*
	ATS818	$147.95
SONY	ICF30	$104.95
	ICF33	$159.95
	ICF55	$344.95
	ICF77	$469.95
	ICFSW100	$349.95
	ICF2010	$344.95
	ICF7600G	$179.95

TABLE TOP RECEIVERS

AOR	AR3030	$599.95sp
DRAKE	R8A	$1069
ICOM	R71A	$CALL*
	R7100	$CALL*
	R100	$CALL*
JRC	NRD535DB	$1699
Kenwood	R5000	$1069
LOWE	HF150	$569.95
	HF225E	$959.95
	HR250	$CALL*
WJ	HF1000	$3799

CB RADIO

COBRA	29LTDWX	$129.95
	HH40	$99.95
	HH70	$109.95
	93LTD	$129.95
	148FGTL	$249.95
	2010GTL	$399.95
UNIDEN	PRO340	$69.95
	PRO501XL	$39.94
	PRO501AXL	$79.95
	PRO538W	$74.95

(*) Lower Price (sp) Special Limited Qty

JOIN THE OPTO/AOR REVOLUTION!!!

Save up to 28%

The Hottest Thing in Scanners in the Last 20 yrs.

- **OPTO Electronics and AOR are revolutionizing the scanner world. The new Scout 40 version 3.1 and the AOR AR2700/AR8000 scanners gives you the *Intercept* power in your hands, that just a few years ago could only be a dream. Imagine having your scanner hop on a signal the instant someone presses the mic button. The Scout will Reaction Tune your AOR scanner in a blink of an eye to any locally generated signal.**
- **Scout/AOR system allows easy listening to communications at: Air shows, Car races, Sporting events, Accident scenes, Airports, Railroad, Theme Parks, Marinas, anywhere radios are use.**
- **Scout/AOR is a must for; Law enforcement, News service, TV/Radio news crew, SWAT teams, FBI, DEA, Border patrol, Whenever hearing what's going around you can be a matter survival.**
- **Here is what you need to start truly enjoying your scanner hobby; (1) Scout 40 (2) Scanner AR2700 or AR8000 (3) EEB modification to scanner including interconnect cable (CB-RT)**

Shown with DB32 Antenna Optional $29.95

EEB special package deal Save up to 28%

Scout 40, EEB mod w/cable and AR2700 ($839.95) or AR8000 ($1039). One year warranty on system included. Optional extended 3 year total system warranty $79.95

!!REMEMBER!!
The AR8000 is the only portable on today's market that has true USB/LSB/SSB with 50 Hz steps. Listen to easy to tune true SSB.

AR2700 & AR8000 are cellular block per FCC. Unblocked units available to qualified users.

• AR2700	list	$499.95	EEB	$399.95
• AR8000	list	$799.95	EEB	$599.95
• Mods & system check			EEB	$50
• Cable CB-RT			EEB	$20
• Scout 40	list	$449.95	EEB	$399.95

CYBER SCAN AOR AR5000

NEW AR5000 AOR

The new AOR AR5000 is on it's way. At this writing (mid Sept) details are sketchy. *Internet* is buzzing and here are some of the tentative specs.

•10KHz-2600 MHz •1000 memories •All mode AM/FMN/FMW/LSB/USB/CW •IF band width 3 to 200KHz (7 filters) •12VDC computer control 10.7 MHz IF output

Watch our next ad for more detailed information

Price in the $2000 class

Night Vision

Imagine seeing in the dark. This state of the art scope allows you to observe by starlight, superior optics produce brilliant images. Ideal for hunting, neighborhood watch, security, wildlife, law enforcement and star gazing. (You'll see 1000s more stars)

NV100 List $449 **EEB $339.95**
NV100-1 w/Illuminator List $499 **EEB $379.95**
NV100C compact List $349 **EEB $299.95**
NV100C-1 w/Illuminator **EEB $329.95**

GE SUPERADIO III

Puts the fun back into AM Dx'ing

At last there is an AM/FM radio built for the radio aficionado. Has extra large ferrite rod antenna, R.F. amp stage, 4 I.F. stages, wide/narrow filter, 2 speakers, bass & tremble. All adds up to superior reception! It's also great on FM too! New lower price this issue only;

From 11-15 to 1-15-96... $54.95

GPS Global Positioning System

It's sweeping the industry and now prices start under $200. Perfect gift for the Hunter, Camper, Boater, Outdoorsmen and fun for all! Know your location and altitude to within 300ft anywhere in the world. We carry all major GPS brands.

Magellen GPS2000 Only $199.95

All new expanded 1996 catalog. Hundreds of new items, you should have a copy by now...if not...get one!

CATALOG 1996
- *SW*
- *Scanner*
- *Amateur*
- *Books*
- *Comm/Govt.*

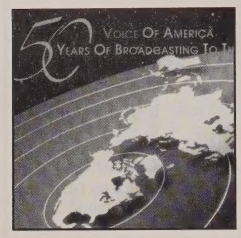
EEB

EEB
323 Mill St.
Vienna, VA. 22180
FAX: 703 - 938 3350

Orders: 800 368 3270
INFO/Metro: 703 938 3350
BBS: 703 938 3781
Internet: eeb@access.digex.net

- We'll match anyone's deal
- Prices subject to change
- Prices do not include freight
- Returns subject to 20% restock fee
- Sorry no COD's

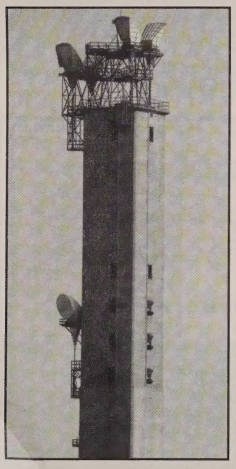
POPULAR COMMUNICATIONS



20

26

81


58

FEATURES

DXing Europe—The Hard Way 8
Take the challenge we've prepared and try to log these European shortwave stations.
By Gerry L. Dexter

The Road to Radioville 12
It's time to take another drive down memory lane.
By Alice Brannigan

Snaring the Sidebanders 20
Shortwave broadcasting is not just AM anymore.
By Gerry L. Dexter

Books You'll Like 24
Shortwave Propagation, How to Make $100,000., Macintosh Revelations and more.
By R.L. Slattery

POP'COMM Reviews: 34
The HOKA Code-3 HF Data Comm Decoder.
By POP'COMM Staff

COLUMNS

Satellite View 26
How I Got Started 35
Broadcast DXing 36
The Ham Column 42
You Should Know 44
Handi-Chat 49
Emergency 50
Telephones Enroute 52
CB Scene 56
Communications Confidential 58
Washington Pulse 68
Pirates Den 71
Clandestine Communique 72
Scanning VHF/UHF 74
Listening Post 81

DEPARTMENTS

Thoughtwaves 5
Mailbag 6
World Band Tuning Tips 46
Communications Shop 87

***This month's cover**: An engineer checks the 800-kHz transmitter at Trans World Radio in Bonaire, Netherlands Antilles. In addition to the mediumwave powerhouse station, TWR also operates several shortwave transmitters from the site. Photo by Larry Mulvehill, WB2ZPI.*

EDITORIAL STAFF
Chuck Gysi, N2DUP, Editor
(Internet e-mail: POPCOMM@aol.com)
Tom Kneitel, K2AES/KNY2AB, Senior Editor
Deena Marie Amato, Associate Editor
Richard S. Moseson, NW2L, Online Coordinator

CONTRIBUTING EDITORS
Gerry L. Dexter, Shortwave Broadcast
Gordon West, WB6NOA, Emergency
Don Schimmel, Utility Communications
Edward Teach, Alternative Radio
Tim Kridel, AM/FM Broadcasts
Capt. William Mauldin, WG4R, Thoughts & Ideas
Donald E. Dickerson, N9CUE, Satellites
ARRL HQ, Amateur Radio
Joe Carr, K4IPV, Antennas
Ted Lisle, KD4EXK, Handi-Chat
Jock Elliott, SSB-734, Citizens Band
J.T. Ward, Scanning

BUSINESS STAFF
Richard A. Ross, K2MGA, Publisher
Donald R. Allen, N9ALK, Advertising Mgr.
Emily Kreutz, Sales Assistant
John Dorr, K1AR General Manager
Frank V. Fuzia, Controller
Simon Schatzmann, Circulation Director
Catherine Ross, Circulation Manager
Melissa Nitschke, Operations Manager
Carol Licata, Data Processing
Denise Pyne, Customer Service

PRODUCTION STAFF
Elizabeth Ryan, Art Director
Barbara Terzo, Associate Art Director
Susan Oliveri, Assistant Art Director
Edmond Pesonen, Electronic Comp. Mgr.
Dorothy Kehrwieder, Production Manager
Emily Kreutz, Assistant Production Manager
Wendy Motchan, Promotions Manager
Pat Le Blanc, Phototypographer
Hal Keith, Technical Illustrator
Larry Mulvehill, WB2ZPI, Photographer

A publication of

CQ Communications, Inc.
76 North Broadway
Hicksville, NY 11801-2953 USA

Offices: 76 North Broadway, Hicksville, NY 11801. Telephone (516) 681-2922. FAX (516) 681-2926. Popular Communications (ISSN-073-3315) is published monthly by CQ Communications, Inc. Second class postage paid at Hicksville, NY and additional offices. Subscription prices (payable in U.S. dollars): Domestic—one year $22.95, two years $41.00, three years $60.00. Canada/Mexico—one year $32.95, two years $61.00, three years $96.00. Foreign—one year $34.95, two years $65.00, three years $96.00. Foreign Air Mail—one year $82.95, two years $262.00, three years $240.00.

U.S. Government Agencies: Subscriptions to Popular Communications are available to agencies of the United States government, including military services, only on a cash with order basis. Requests for quotations, bids, contracts, etc. will be refused and will not be returned or processed.

Entire contents copyright © 1995 by CQ Communications, Inc. Popular Communications assumes no responsibility for unsolicited manuscripts, photographs, or drawings. Allow six weeks for change of address or delivery of first issue.

Printed in the United States of America.

Postmaster: Please send change of address to Popular Communications, 76 North Broadway, Hicksville, NY 11801.

QUALITY COMMUNICATIONS EQUIPMENT SINCE 1942

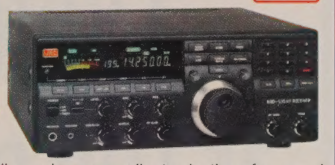
AMATEUR RADIO EQUIPMENT

KENWOOD YAESU ICOM JRC STANDARD AEA ALINCO

Universal has been selling the finest in new and used amateur radio equipment since 1942 and is an authorized sales *and* service center for all major lines.

COMMUNICATIONS RECEIVERS

YAESU KENWOOD JRC DRAKE LOWE ICOM



Universal Radio carries an excellent selection of new and used communications receivers. JRC NRD-535D shown.

RTTY AND FAX DECODERS

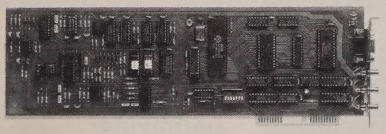
◆ **Universal M-8000 Decoder**

The professional-grade M-8000 was designed primarily for the military, commercial and diplomatic user, but can be used by the hobbyist who requires maximum intercept capability. The color VGA output includes a spectral display and simulated tuning scope. Modes currently include: **CW, Baudot, FAX, SITOR, ARQ-M2 & M4, ARQ-E/E3, ARQ6-90, ARQ-S, SWED-ARQ, FEC-A, FEC-S, ASCII, Packet, Pactor, Piccolo, VFT, ACARS, POCSAG** and **GOLAY**. Too many features to list here. Monitor and printer optional. **$1349.00** (+$10)

◆ **Universal M-400 Reader**

The self-contained Universal M-400 is a sophisticated decoder *and* tone reader offering exceptional capabilities. The SWL can decode: **Baudot, SITOR A and B, FEC-A, ASCII** and **SWED-ARQ**. Weather FAX can also be decoded to the printer port. The VHF-UHF listener can copy the **ACARS** VHF aviation teletype mode plus **GOLAY, POCSAG** and **SUPER POCSAG** digital pager modes. Even off-the-air decoding of **DTMF, CTCSS** and **DCS**. Big two-line, 20 character LCD and parallel printer port. The M-400 runs from 12 VDC or with the supplied AC adapter. No computer or monitor is required. Made in the U.S.A. **$399.95** (+$6)

◆ **Universal M-1200 Decoder Card**



Turn your *PC* into a powerful intercept device! Reception modes include: **CW, Baudot RTTY, SITOR, FEC-A, ARQ-M2, ARQ-E/E3, FAX** and **ARQ6-90** plus **ASCII** and **Packet**. VHF enthusiasts can copy **PL, DCS,** the **ACARS** aviation mode, **POCSAG** and **GOLAY.** Operation is easy through on-screen menus, status indicators and help windows. Requires *PC* with VGA monitor. Made in the U.S.A. **$399.95** (+$5)

HUGE FREE COMMUNICATIONS CATALOG

Universal offers an informative catalog covering **everything** for the shortwave, amateur and scanner enthusiasts. With prices, photos and full descriptions. It's **FREE** by bookrate, or for $2 by first class mail. Request it today!

COMMERCIAL RECEIVERS

The Watkins-Johnson HF-1000 is *the* ultimate receiver! Advanced D.S.P. technology, 58 bandwidths, 1 Hz display. Under $4000. Please contact us to receive a spec. sheet.

PORTABLE RECEIVERS

ICOM SONY GRUNDIG SANGEAN

Universal offers over 40 portable receivers from $20 to over $500. Our **free** catalog fully describes & prices all models.

COMMUNICATIONS BOOKS

● **Passport To Worldband Radio** *By L. Magne*
Graphic presentation of all shortwave broadcast stations. Equipment reviews, too. A *must have* book. **$19.95** (+$2)

● **World Radio TV Handbook**
All shortwave broadcast stations organized by country with schedules, addresses, power, etc. **$24.95** (+$2)

● **Worldwide Aeronautical Frequency Dir.** *By R. Evans*
The definitive guide to commercial and military, HF and VHF/UHF aero communications including ACARS. Brand new huge Second Edition. 260 pages. **$19.95** (+$2)

● **Shortwave Receivers Past & Present** *By F. Osterman*
Your guide to over 200 receivers with new and used values, specifications and features. Photos for most. **$9.95** (+$2)

● **Comprehensive Guide to Military Mon.** *By Douglass*
Covers equipment, SW and VHF/UHF frequencies, identifiers, playbook, bases and black projects. **$19.95** (+$2)

● **Discover DXing!** *By J. Zondlo*
An introduction to DXing AM, FM and TV. **$4.95** (+$2)

● **The World Below 500 KiloHertz** *By P. Carron*
An introduction to the world of longwave DX. **$4.95** (+$2)

● **Understanding ACARS** *By E. Flynn*
Learn how to decode the ACARS format. **$9.95** (+$2)

☞ *Be sure to include $2 per title for shipping.*

SPECIALS

■ **Kchibo KK-210B** 21 Band LW/MW/SW/FM Receiver
This amazing analog portable covers LW, MW, FM and **all** shortwave frequencies from 2.3 to 26 MHz! **$19.95** (+$4)

■ **Sony ICF-M350V** AM/FM/TV-audio/Weather Receiver
This fully digital portable receiver lets you hear AM, FM, VHF TV audio or weather anywhere. A great gift. **$49.95** (+$5)

universal radio inc.

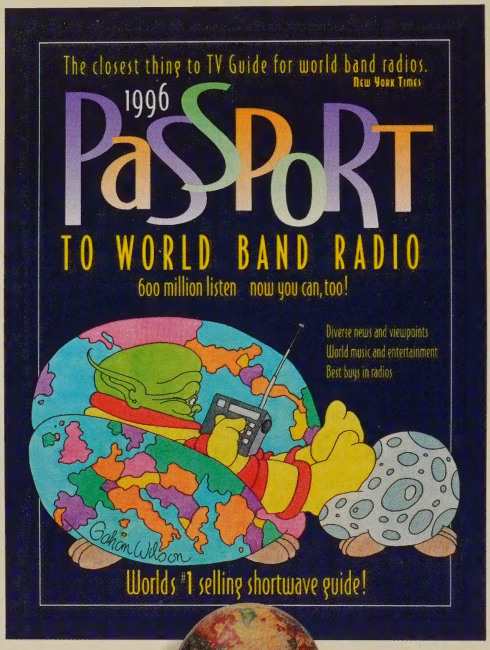
Universal Radio, Inc.
6830 Americana Pkwy.
Reynoldsburg, Ohio
43068-4113 U.S.A.

☎ **800 431-3939** Orders & Prices
☎ 614 866-4267 Information
→614 866-2339 FAX Line

- Visa
- MasterCard
- Discover

- Prices and specs. are subject to change.
- Returns subject to a 15% restocking fee.
- Used equipment list available.

Explore your world at the push of a button...


The closest thing to TV Guide for world band radios.
New York Times
1996
PASSPORT
TO WORLD BAND RADIO
600 million listen now you can, too!
Diverse news and viewpoints
World music and entertainment
Best buys in radios
Graham Wilson
Worlds #1 selling shortwave guide!

Unparalleled news and perspectives, plus every sort of music and entertainment. From over 100 countries. That's world band radio. PASSPORT TO WORLD BAND RADIO is jam-packed with just what you need to eavesdrop on the world: Best and worst radios (PASSPORT REPORTS). Station addresses and giveaways (Addresses PLUS).

Schedules, too—the way you want them. What shows are on, hour by hour (What's on Tonight)... country by country (Worldwide Broadcasts in English and Voices from Home)... frequency by frequency (the renowned Blue Pages).

With PASSPORT, the world's at your fingertips...

- Fully revised and greatly expanded for 1996.
- Exceptionally handy for day-to-day use.
- Over 600,000 copies sold worldwide.

"This is *the* user-friendly book about shortwave radio... very authoritative... very thorough."

BBC World Service

"An invaluable bible to keep next to your shortwave receiver—or to persuade you to buy one."

Communications Booknotes

PASSPORT TO WORLD BAND RADIO

The must-have guide to your must-hear world.

ISBN 0-914941-37-2

Available from dealers and bookstores throughout the United States, Canada and the United Kingdom, or write:

IBS, Box A300, Penn's Park, PA 18943 USA

CIRCLE 127 ON READER SERVICE CARD

THOUGHTWAVES

BY CHUCK GYSI, N2DUP

AN EDITORIAL

Family Radio Service: YES; But Not On GMRS Frequencies

As you'll read in Capt. Mauldin's "You Should Know" column this month, there's a movement afoot within the Federal Communications Commission to create a radio service that caters to families without licensing. And it seems real close to happening. For some reason, the FCC has taken it upon itself to act on a mandate by Congress in the late 1970s to delicense the General Mobile Radio Service, much like it did with the former Class C (radio control) and Class D (voice) citizens band.

Do we need a Family Radio Service? Do families have a unique need for two-way radios in their lifestyles? Apparently, the folks in the RadioShack Division of Tandy Corp. think so. Motorola's folks agree, and have told the FCC in filings that an FRS would serve the public. They've been joined in comments filed by the Telecommunications Industry Association, too.

I've been licensed on GMRS for a very long time—almost two decades. I've found it to be a valuable radio service for my family to use. When I lived on the east coast, my wife and I used the 222-MHz ham band to keep in touch. With wide-coverage repeaters, it was a cinch to reach out to each other, especially considering we each drove 30 miles one way to work in opposite directions each day.

However, when we moved to the Midwest, we found the 222-MHz band just wasn't useful because of the lack of any repeaters in our area. Sure, we used it simplex around town, but we couldn't get the extended coverage that repeaters offer. So, we scrapped the 222-MHz radios and installed UHF radios in each of our cars, put a repeater on the air and set up a control station in our house. This allowed us to keep in touch on a UHF business band repeater, but the FCC rules limit the amount of personal traffic that can be said on business radio service frequencies. We found that GMRS would work fine as a backup. We had been using UHF handi-talkies on GMRS frequencies for things like keeping in touch in a mall, or to arrange pickups for each other while in another town on business ("Hey, I'm done with my meeting; come on over and pick me up!").

I really like GMRS. It's an excellent concept and it's hard to believe that it was the original CB back when CB was created in the late 1940s. The problem then, however, was there wasn't an abundant supply of cheap UHF radios available. However, now you can buy radios capable of operating on GMRS in many stores. Personally, I can walk into a local farm supply store and buy a Motorola HT set up on 10 GMRS frequencies, not to mention the local RadioShack store that offers its own version of GMRS radio.

I've taught my two young sons how to use radios on GMRS and they love walking around chatting to each other on one of the interstitial frequencies with their headsets and HTs. They also know they need to give Daddy's callsign every once in a while. After all, we're licensed.

However, the FCC seems bent on creating the FRS that will share some GMRS frequencies and then take some others that were considered on reserve for GMRS. The FCC is proposing to use the 462-MHz interstitial frequencies sandwiched between the full-power GMRS frequencies and then take the similarly paired 467-MHz frequencies. This means that there will be both unlicensed and licensed users on the seven 462-MHz frequencies. If one stops and takes a look back several years, you might remember when kiddie-talkies, those unlicensed 100-mW walkie-talkies that operated on 27-MHz CB channels, shared citizens band frequencies with licensed CBers. Heck, that's how I got my start in CB about 25 years ago. One year for Christmas my parents gave me a two-channel 100-mW Realistic walkie-talkie with Channel 11 crystals (I eventually bought crystals for other channels), and I chatted with some of the local kids in the neighborhood with CB base stations. They were licensed and thought nothing of communicating with my unlicensed station. In fact, without digging up a copy of the old FCC rules for CB, I think there was a ban on unlicensed stations communicating with licensed stations. But, who cared? Apparently, the FCC cared because they moved those unlicensed kiddie-talkies to the 49-MHz band, where they reside today with the hodgepodge of cordless phones and baby monitors.

Well, the FCC wants GMRS users to share their interstitials with FRS users. Will it work? In all honesty, I think each would ignore the other. But it will create a potential logjam on these frequencies that GMRS users, who pay a fair amount for their licenses, have come to appreciate. When the full-power GMRS channels are busy with communications, you can almost always find the interstitials quiet and usable. I think it's the best place for my kids to chatter away without causing potential problems for full-power users.

I also like the idea of an FRS, but I don't think the 462- and 467-MHz bands are the place for it. Surely, there are other places that would work better. I personally favor the catch-all 900-MHz band. While hams can use the 902-928 MHz band, few actually do because there is no commercially manufactured ham equipment for this band and there are other unlicensed users that cause potential havoc. For instance, there are industrial and scientific operations on that band in some areas, vehicle monitoring systems can use the segment and the new 900-MHz cordless phones use the band, too. I even have a wireless transmitter in the shack that can send video signals from a VCR to your TV in this band (it's great for sending scanner audio from your base scanner to your handheld scanner on 900 MHz!). Perhaps you're getting my drift here: Hams avoid the 902-MHz band because of all the junk that shows up there. Unless you live in the middle of nowhere, it can prove to be a crappy band.

Re-enter FRS. If GMRS users have to contend with unlicensed users on their 462-MHz interstitial frequencies, they may give up all together. That means that some of the simplex communications that take place on the interstitials may wind up on the full-power frequencies. Yes, that's where you'd hear my kids chattering if they had to contend with unlicensed users in the neighborhood!

At presstime, the FCC already has issued a Notice of Proposed Rulemaking and

(Continued on page 86)

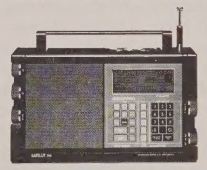
Season's Greetings

GILFER KNOWS GRUNDIG!

GRUNDIG
Yacht Boy 400

- 40 Memory Channels
- 1.6—30 MHz, plus LW, MW & FM Stereo (w/phones)
- Wide & Narrow Bandwidths
- SSB Capable
- Clock, Timer & Alarm Functions
- Carrying Case, External Antenna & Batteries Standard
- Optional AC Power Supply Available

GRUNDIG
Satellit 700



- 512 Memory Channels (expandable to 2048!) with Alpha- numeric ID Display
- Synchronous AM Detection with Selectable Sideband
- 1.6—30 MHz, plus LW, MW & FM
- SSB Capable
- Clock, Timer & Alarm Functions
- AC Power Supply
- Audio Output: 3W

Send $1 for complete catalog of shortwave products!

GILFER SHORTWAVE
52 Park Avenue
Park Ridge, NJ 07656

ORDERS: (800) GILFER-1
NJ & Technical: (201) 391-7887
Fax: (201) 391-7433

MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender's name if the letter is used in Mailbag. Address letters to: Chuck Gysi, N2DUP, Editor, Popular Communications, 76 N. Broadway, Hicksville, NY 11801-2909, or send e-mail via the Internet to POPCOMM@ aol.com.

Yes, Hamfests Ask Too Much At Gate

I totally agree with your editorial on hamfests (October *POP'COMM*).

I attended two in the past two years sponsored by the same amateur radio club. The first time I went to see if I could obtain material to help me with my shortwave listening hobby, but found nothing. I went again this year to get computer software, which is readily available at these shows.

However, I did not feel either show was worth the $4 admission charge. Most vendors had junk that was both overpriced and ready for the trash heap! I swear the same stuff was on display from the previous year!

You are right: The sponsors of hamfests shouldn't be so greedy with admission prices and be more realistic. I would make it a point to attend more shows so I can get more equipment and knowledge, but I don't feel it is worth the high admission price.

Sue Wilden, KIN9GK
Columbus, Ind.

Readers' REACTions Prove Favorable

(Editor's note: The following letter was sent to POP'COMM*'s CB Scene columnist, Jock Elliott.)*

I want to tell you how much I appreciate your upbeat, positive attitude toward CB radio. Your writing makes it clear that you regard CB as a highly valid communications tool, not a play toy.

Your convictions about CB emergency Channel 9's continuing safety importance to millions of American travelers are most encouraging. Thousands of REACT volunteers who monitor that emergency frequency know just how accurate your views are.

You are doing much to enhance the image of CB radio. It is an approach that was long overdue. You deserve a great deal of credit for treating CB seriously. It has saved too many lives to be regarded as anything other than an important communications link.

The outlook you present can only benefit users of the band. You encourage higher standards of CB operation by the very tone of your writing. For this you are to be commended.

Thanks very much from all of us—REACTers and others—who monitor CB emergency Channel 9 to safeguard travelers and assist police continentwide.

Ron McCracken
Past President
REACT International Inc.

Congratulations on becoming the editor of *POP'COMM*. I hope you have many wonderful years in this new position and I'm sure that you'll do as good (or better) a job as Tom did. I enjoyed your first editorial and look forward to many more.

I've been a reader and subscriber to *POP'COMM* for eight years now and I don't have any plans to cancel. *POP'COMM* usually is read from front to back in less than three days and that's on top of four other magazines, the newspaper, books, working and raising a family.

To regress a bit, I would like to say thank you to the staff of *POP'COMM* for the past article on REACT just after the Flood of '93. It made our REACT team very happy (and me, too, as it was my favorite picture that was on the lead page).

Keith Mehl, N0TPP
Secretary/Treasurer,
Greater Des Moines
REACT 4872
Secretary, Iowa REACT Council
(via America Online)

Forbidden Zone

I own a Kenwood R-2000 communications receiver. The set is rated to receive low frequencies down to 100 kHz, but the tuning knob will continue to read below that. Yesterday, I kept on tuning downwards toward the low end of the frequency spectrum to see if I could hear *whistlers*. I was surprised to see that after the frequency display reaches 1 kHz, it next goes to 0 kHz, and then begins displaying negative digits below zero. What's this all about?

Owen Moriarty,
Salt Lake City, Utah

The Kenwood R-2000 happens to be an excellent receiver. Most listeners wouldn't attempt to tune below the set's

(Continued on page 86)

HF 150 IBS★★★★

REAL RADIO, RUGGED, RELIABLE

Simplicity makes the HF150 easy to operate, and the synchronous detection produces superb audio which enhances the outstanding performance!

- Frequency: 30kHz - 30MHz
- Multimode: AM, AMN, LSB, USB
- 60 Memories (FREQ. & MODE)
- Tuning Step: 8Hz
- Bandwidth 7kHz & 2.5kHz
- 3 Ant. inputs, 600 Ohm BAL, 50 Ohm Coax and high impedance whip
- Built In Speaker, Ext. Jack & Record OUT
- Power 10-15VDC .15A (.3A max)
- Includes FREE AC adaptor
- Size: 7.3"W x 3.2"H x 6.3"D; 2.9 lbs.

LOWE

HF250

The Lowe HF 250 is set to become the new world standard for midpriced receivers.

The new HF 250 combines Lowe's traditional high standards and quality of construction together with the advanced facilities and control features required by today's discerning listener!

FEATURES

- * Frequency coverage 30kHz to 30MHz
- * Tuning step size 8Hz
- * Back-lit display
- * Display resolution 100Hz
- * 255 memory channels
- * Memory channels also store frequency, mode, filter selection and attenuator setting.
- * Computer control via RS232 port.
- * Clock with 2 independent timers
- * Fast tuning in 10kHz steps
- * 1MHz up/down tuning
- * Infra red remote commander

AP150

The Ultimate Lowe Accessory!

A combination audio filter, amplifier and speaker. Works well with any SW receiver or transceiver, but designed to compliment the HF150.

Features:

- •10W Audio amplifier
- •Variable notch filter
- •High pass filter
- • Low pass filter
- •Built-in loudspeaker
- •External speaker output
- •Headphone output

PR150

Pre - Selector w/ Pre-Amplifier

A perfect match to the HF 150, but equally effective with other SW receivers. Obtain wide coverage of 100KHz to 30MHz through the use of seven tunable bandpass filters. Multiple antenna inputs, pre-amp attenuator and much more. Hear what you've been missing!

Antenna input: 50ohm unbalanced, 600ohm balanced • **Power:** 10 - 15VDC

Size: 7.3"w x 3.2"H x 6.3"D

ACARS FROM LOWE.....The Air Master!

A super combination of hardware and software for the receiving and decoding of **ACARS** (Aircraft Communications Addressing and Reporting System). This format is used to transmit data between aircraft and airport ground stations. This information is transferred via VHF to the **ACARS** ground station. When using the Air Master software with your PC and an air-band receiver, you'll be able to view the **ACARS** messages as they are received. The package includes the MS-DOS software for use with a 386 or higher PC, the computer interface and manual.

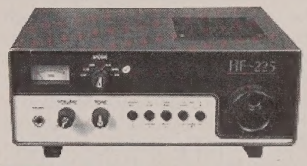
WRTVH RECEIVER OF THE YEAR!

HF 225

IBS★★★★

Rated 4 stars by Passport's Larry Magne

- Multimode, AM, SSB, CW • 30 Memory Channels • Optional AM Synchro & FM • Filter for all Modes: 2.2, 4,7, 10kHz 200Hz audio CW filter
- Built-In Speaker, Ext. Speaker, Rec. Jacks
- 10-15VDC .15A (.3A MAX) AC/Nicads Opt.
- Size 10"W x 4.2"H x 8"D; 4.18 lbs.



HF 225E EUROPA

A "Turbocharged" HF225 for the dedicated DXer! Same high performance features of the HF225 plus these additional features:

- •7, 4.5 & 3.5kHz replacement filters for excellent selectivity
- •Reduced residual noise thru shielded coils and switching diodes
- •Synchronous detector (D225) & KPAD1 standard on Europa version

SEE YOUR DEALER FOR DETAILS!

HF 235

Top of the line rack version of the HF225, with similar specs. A professional communications receiver for the discriminating user, with high stability OSC & opt. computer RS232.

Keypads for the HF150 and HF225, Carrying Cases, Mounting Brackets, and a Computer Control Interface are just a few of the extras which can give you optimum performance of your LOWE product. Contact EDCO for the dealer nearest you!

EDCO

Electronic Distributors Co.
P.O. Box 1936 • Vienna • VA 22180
Ph 703 • 938 • 8105 FAX 703 • 938 • 4525
Contact your favorite Dealer today!

EDCO

DXing Europe— The Hard Way

You Won't Find It Easy to Log These Shortwave Stations

BY GERRY L. DEXTER

Here comes our newest "how-to-hear-it" article. This one is different however, because we're not going to focus on providing information that will make it as easy as possible for you to hear the stations. This one's just the reverse: A challenge to try and hear all the European countries active on shortwave, but without taking the easiest approach!

Even so, some will be easier than others. The truth is that DXing some of the Europeans is a very difficult business, even under the best conditions! The government radios of some countries just aren't powerhouses of the Deutsche Welle variety. If anything, they're more like some of the peanut-whistle stations of South America insofar as audibility is concerned. Sometimes that even applies to stations using relatively high power.

Our country-by-country run-through offers you shots at signals from lower-power transmitters where they exist, and suggest trying services or time/frequency combinations not designed for reception in North America. In a couple of cases, we've picked a station other than the well-known government broadcaster. Our list has been devilishly designed to cause your frustration meter to climb well into the red area!

Let's get to it, then. All times are in UTC.

ALBANIA—Have a try for Radio Tirana's relay of the Home Service's First Programme, which airs on 6100 from 0400-2300.

AUSTRIA—Radio Austria International's service to the Middle East from 0500-0800 should be very tough. It airs on 15450 and 17870 in Arabic, English, German and French. From 0800-1100, the focus shifts to Australia/New Zealand.

BELARUS—Radio Belarus, also called Radio Minsk, airs broadcasts to Europe in Belorussian from 1900-2000 on 5940, 7105, 7210 and 7405. The first and last frequencies actually are from transmitters in the Ukraine, though, so if you do hear one of those you're not really hearing it direct.

BELGIUM—Radio Vlaanderen International (formerly Belgian Radio and Television) has any number of broadcasts unsuited for North American reception. Try Dutch to Europe on 5910 at 0830-0930 Wednesdays and Saturdays.

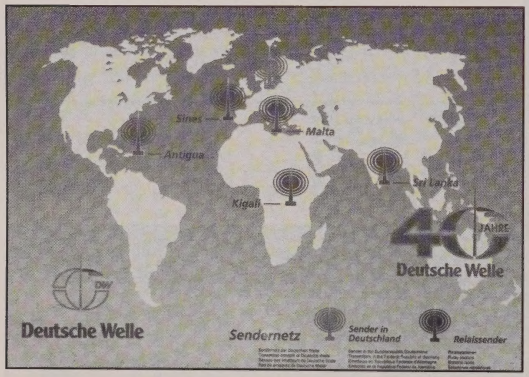
BOSNIA-HERCEGOVINA—Radio Bosnia-Hercegovina is supposed to be operating with single-sideband broadcasts on a variable frequency of 6890, more or less 24 hours a day. The civil war going on in this area leaves the status of this station quite an open question, however.

BULGARIA—Radio Varna is a domestic mediumwave/FM station which is relayed over the shortwave facilities of Radio Bulgaria, but only from May to October! Try 9775 from 2200-0000. The broadcasts are in Bulgarian.

CROATIA—There isn't much difference between the easy and the difficult on the schedule of HRTV Croatian Radio. It's all about the same, and definitely registers on the "difficult" side of the dial. Currently, the station is using 5895, 7370, 11635 and 13830. The latter two frequencies probably are easier to hear, so forget we listed them!

CZECH REPUBLIC—Try good old Radio Prague, broadcasting to Europe at 1830 on 7345 and 9420. Hats off to this station, which didn't feel it had to have a name change when the country came out from under communism.

DENMARK—It doesn't matter how great a DXer you are, you can't hear shortwave broadcasts from Denmark, not directly, anyway. There's an extensive schedule of 25-minute broadcasts via Radio Norway, however. Check at 0830, 0930 or 1030 on 15220, 17740 or 21705. At that hour, most of the time all you'll hear on those high frequencies is "ssshhhh." It'll



You'll have to find a hole in DW's transmissions in order to hear Bayerischer Rundfunk on 6085.

This Radio Tirana card dates back to the years under communism.

Even when it spoke the communist line, Radio Prague was one of Europe's classier stations.

RADIO DENMARK
SWEDEN
NORTH SEA
GERMANY
Copenhagen, 16/15, 1957
DEAR LISTENER,
Your report of 8/7 1957 concerning our broadcast on 9520 kc/s, 31,51 m, 50 kw, call letters OZF5, at 0200-0230 GMT on 2/2 1957, beamed to North America is hereby verified.
Sincerely yours,

Radio Denmark had its own transmitters when it issued this card back in 1957.

put you right back to sleep!

ENGLAND—Try the BBC broadcasting to Europe on 3955 from 0300-0815.

ESTONIA—Radio Estonia, at Tallinn, has a broadcast from 2130-2200 on 5925. It's aired in Estonian on Tuesdays, Wednesdays and Fridays; in English on Mondays and Thursdays and doesn't exist on Saturdays and Sundays.

FINLAND—Radio Finland is a regular visitor for most of us but here's something with a little more spice. Try to pick up their news broadcast in Latin, aired daily from 0553-0600 on 9635 and 11755.

FRANCE—It's surprising in this day of all the big guns on shortwave, but Radio France International still operates a little 4 kW transmitter. It's on 3965 and broadcasts to Europe and Africa from 2200-0700. Be prepared to contend with interference from hams.

GERMANY—Bayerischer Rundfunk, based in Munich, operates in German around the clock over a 100-kW transmitter on 6085. Ah, but Deutsche Welle—The Voice of Germany—also occupies the frequency! However, DW is off the air once or twice for brief periods during our evenings, which opens a window for the Munich station You'll have to park on 6085 and wait.

GREECE—This one isn't actually all that hard. Try Radiofonikas Makedonias, broadcasting to Europe and the Mideast from Thessiloniki. Check 9935 from 0600-2255 or 11580 from 1400-2255. Unless you happen to speak the language, it'll be Greek to you.

HUNGARY—The Kossuth Radio domestic service is aired over a 100-kW transmitter on 6025 from 0330-0000, all in Hungarian.

ICELAND—The Icelandic National Broadcasting Service at Reykjavik has a 10-kW single-sideband transmitter, which it uses five times a day for brief broadcasts in Icelandic to Europe or North America. Try 1855-1030 (to Europe) on 11402 or 13860.

IRELAND—Ireland hasn't had a legitimate shortwave broadcast station in something like 50 years. But every now and then an Irish-based pirate broadcaster will come on the air. Active fairly recently was ABC Dublin on 6940 on Sundays from 0900-1200. The power of this one is a minuscule 55 watts.

ITALY—Have a go at Adventist World Radio's broadcasts on a 10-kW transmitter at Forli, in northern Italy. Various languages are used from 0800-1600 on 7230.

LATVIA—Latvian Radio, Riga, is a mean one, even at its best. Various services are aired from 1800-2200 on 5935.

LITHUANIA—Radio Vilnius carries various home service program services on 6100 and 9710 from 0400-2200. Radio Vilnius on 7150 actually is transmitted from a Russian site.

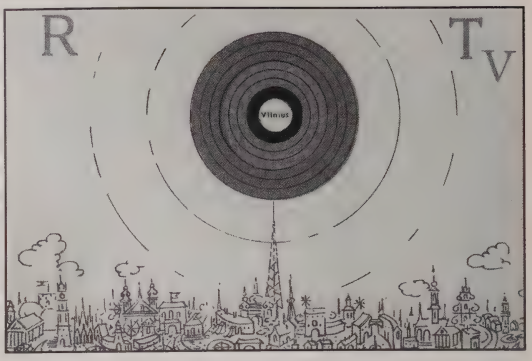
MALTA—Rather than digging into the Malta relay schedule of the Voice of Germany we'll go with the Voice of the Mediterranean, aired over DW's Cyclops, Malta facility. Try the English/Arabic broadcast at 0600-0800 on 9765.

MOLDOVA—Radio Dniester International has been heard by quite a few DXers in North America. Check 9620 or 15290 (depending on the season) at 2130-2200. We offer this instead of the government station, Radio Moldova International, because the latter is beamed from transmitters in Romania.

MONACO—Trans World Radio, Monaco, has an extensive schedule that includes broadcasts in several languages. Try their daily English offering at 0740 sign-on, on 7110.

NETHERLANDS—Radio Netherlands is another of those broadcasters with a schedule so extensive it's hard to pick one hard-to-hear transmission over another.

A good Bulgarian target is the Radio Sofia (ooops, Radio Bulgaria!) facility carrying the domestic Radio Varna transmissions.



Radio Vilnius in Lithuania is a hard one, even in the best of conditions—that is, if you want it direct from Lithuania

Try the one in Dutch, designed for Dutch forces in Bosnia (if they're still there). It airs Sundays from 0900-1025 on 9635 and 9860.

NORWAY—Radio Norway International also has a long list of times and frequencies to pick from. Try their broadcast to Asia and Australia on 17740 at 0900-1000.

POLAND—The little-known Polish Pathfinders station has been heard in North America only a handful of times, in part because it was off the air for a number of years. This 1-kW station operates in Polish on 7205 from 1100-1700 weekdays (which makes it unloggable in North America) and 0900-1700 Sundays; the 0900 broadcast offers only a slight improvement in your chances of hearing the Pathfinder station.

PORTUGAL—The private Catholic station, Radio Renascenca, has programming in Portuguese on 9600 from 0115-0230. Tougher than that is the one from 0400-0600 on 6100, Monday through Friday only.

ROMANIA—Like some others, Radio Romania International's schedule offers loads of hair-tearing possibilities. We'll be a little bit reasonable and suggest you go after them in Romanian, starting at 0500 on 9570 or 11970.

RUSSIA—One thing about Russian radio hasn't changed since "the fall"—it still can be a source of endless frustration. There are any number of "stations"—broadcasters using government transmitters, many of which don't last that long.

Here are a couple of government regional broadcasters: Radio Vladivostok in the wee hours on 4010, or Krasnoyarsk on 5290 beginning at 2200. Both stations broadcast only in Russian.

SLOVAKIA—Radio Slovakia International? Pretty easy at 0100 to North America. But how about in Slovak to Australia at 0900 on 17485?

SPAIN—Try Radio Exterior de Espana's transmission in the "minority languages" of Catalan, Galican and Basque, Monday to Friday at 1010-1055 on 17715.

SWEDEN—You can flip a coin to pick something from Radio Sweden's schedule. Try the broadcast in Russian directed to Asia and Europe at 1400 on 11650 and 15120.

SWITZERLAND—We could find many nasties in Swiss Radio International's schedule, too. Instead, how about United Nations Radio in Geneva? There are daily single-sideband broadcasts at 0600 and 1800 on 10461; also at 1200 on 17520, using 15 kW.

UKRAINE—Go after Radio Ukraine International's broadcast in German to Europe at 0000-0100 on 4820, 5915, 6020, 9810 or 11870. 4820 would be one of the toughest.

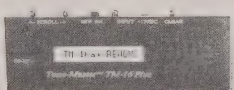
VATICAN—Vatican Radio's schedule has lots of things in it that could cause you grief. A pretty good choice to do the job would be the 0400 broadcast in Croatian on QRM-prone 3945.

YUGOSLAVIA—Radio Yugoslavia's foreign service features about a dozen languages and 14 different frequencies. We'll pair up one of each and try the relay of the Belgrade home service, beamed to Australia at 1400 on 11835.

There is actually a point to all this. More than one, in fact. As SWLs and DXers, perhaps we sometimes tend to get lazy and stay too much with the big signals. And perhaps sometimes we forget just how much is out there, bouncing around the ionosphere every second of every day. What we hear as we tune across the shortwave broadcast bands is really just the tip of the iceberg.

There are endless shortwave challenges awaiting our attention: interesting services, low-power transmitters and unusual transmissions that we sometimes ignore in the endless effort to log another new country or station. Even though you will probably hear less than half the things we have suggested, there is lots of fun just in trying!

So go to it, and good luck ! ■

Motron Electronics 310 Garfield St Suite 4 PO Box 2748 Eugene, Oregon 97402
New DTMF & Rotary Test Decoders
TONE-MASTER™ TM-16A & TM-16A Plus

Decode and display DTMF from nearly any audio source; scanner, tape recorder, etc. And now decode and display either DTMF or Rotary digits from a telephone. TM-16a PLUS with RS-232 serial output includes Logger Software for optional automatic date/time/number logging using your IBM Compatible computer. Prices and specifications subject to change without notice
TM-16A DTMF & Rotary Decoder $179.00 TM-16A Plus with RS-232 output $249.00
Shipping/Handling $5 USA/Canada, $15 Foreign. Premium shipping available for an additional charge. Visa, MasterCard, Discover & American Express Accepted. COD on Cash or Money Order basis only: $5.
Orders: (800) 338-9058 Info: (503) 687-2118 Fax: (503)687-2492

AOR The Latest From AOR Products

Available at a Dealer Near You!

"The New Star" AR 2700... Out of this world Wideband Scanner

The new AR 2700 from AOR is another break-through for general coverage scanners at an affordable price. It combines wide freq. coverage with many advanced features & options, including computer interface and voice recorder. With this small marvel, you will never miss important calls and conversations through the use of the optional digital voice recorder.

• FEATURES •

Wide frequency range: 500kHz to 1,300MHz with various step size, 5, 6.25, 9, 10, 12.5, 20, 25, 30, 50, & 100kHz (wide FM only).

Auto Mode tuning: Comprehensive band plan has been pre-programmed to simplify the operation. The AR 2700 will automatically select the appropriate mode and channel step.

Great flexibility in programming, for Scan and Search mode. Delay, Pause and Priority intervals can be set to a specific value. Program search, Manual search, Bank link, Delay, Pause, Pass, Scan, Bank delete, Priority are provided.

High Capacity: 500 channels into 1- banks and 1- search banks.

Optional Digital Voice Recording: 20 seconds of digitized recorded conversation and playback through the use of the **RU-2700** option.

Computer control port may be connected via an optional adaptor to a computer for remote control of the AR 2700.

AR8000 shocks the market. AOR made every effort to incorporate the latest technology in to this new scanner.

• SPECIFICATIONS •

- **Range:** .5 - 1900MHz usable to 100kHz
- **Modes:** AM/NFM/WFM/USB/LSB/CW
- **Stepsize:** 50Mz to 999.995kHz
- **Sensitivity(μV):** 30 to 1000MHz
  SSB .2 **AM** 1.0 **NFM** .35 **WFM** 1.0
- **Filters:** (kHz) **SSB** 4 **AM/NFM** 12 **WFM** 180
- **Memories:** 50 ch. x 20 banks=1000 total *
- **Size/Wt.:** 6.1 x 2.8 x 1.6 inch. 20 oz. batt. incl.

* Cell blocked for all, but Approved agencies.

- Covers .5-1900MHz*
- Ferrite Rod antenna below 2MHz
- Only portable scanner on U.S. market to have true SSB, both LSB & USB. Others attempt SSB using a BFO, but are difficult to tune and produce poor SSB audio.
- 4 level alpha numeric LCD read out frequency, mode, signal strength, band scope spectral display, battery low, remote and more
- Computer control up/down load data, will add a new dimension to the world of scanning.
- Clone your memory banks with a friend, load 1000 memory channels in seconds

.1 - 1900MHz*

AR 3000A Compact, professional quality, wide range monitor receiver

Incredibly wide continuous coverage from 100kHz all the way up to 2036MHz* • Receives all modes • FM, AM, FMW, LSB, USB, and CW - so you'll hear everything! • Superb R.F. performance thru the use of 15 switched discreet band-pass filters with GaAs FET R.F. amplifier, delivers high sensitivity, wide dynamic range and excellent intermodulation rejection • Tuning rates are continuously selectable from 50Hz to 1MHz steps • True professional's choice!

Computer Interface for the AR8000 & AR2700

Unlike some of the European devices sold today, this unit is smaller, lighter, and makes no power demands on your receiver. With the extra shielding and smaller size there is less chance of additional interference leaking into your radio. The AR8000INF is also the only interface that is upgradeable for use with the optional Tape recorder controller due first quarter '95.

- △ Low Power, powered by your serial port
- △ No Drain on the batteries in the radio
- △ Light weight, perfect for Laptop use
- △ Hi-Tech Surface mount design for reliability
- △ 100% Shielded cable to receiver for reduced interference
- △ PC Software included for Windows and DOS
- △ Detailed Programers documentation available
- △ Designed and Manufactured in the USA

Other AOR Products available: AR3030, SDU5000, AR3000, TSC100

Electronic Distributors Co.
325 Mill Street, N.E.
Vienna, VA. 22180
Phone: 703 938 8105 FAX: 703 938 4525
Exclusive North and South American Distributors.

The Road to Radioville

A Drive Down Memory Lane

BY ALICE BRANNIGAN

"*Radio, a voice that goes from one end of the world to the other.*" Just think, that accurate description was written 1,800 years ago! It's the first use of the word "radio," plus that amazing definition. This came from the *Talmud* (Yoma, fol. 21), and is translated from Hebrew, "Radio kol sheholekh misaph hapalm vuad sophoe."

It took 1,700 more years for members of our civilization to actually invent the device named and described in those ancient religious writings. Not to worry, because as soon as radio became invented, individuals and organizations wasted no time conceiving ways to utilize its potentials. Yes, we shall see, even the word "radio," itself!

Marconi Built the Transmitter

Among the earliest broadcasters were religious groups. A few years later, when shortwave development opened the possibilities of international broadcasting, religious organizations were at the forefront of that emerging technology, too.

Contained entirely within the continental borders of Italy is the sovereign nation of the Vatican City state. Though it is the smallest (108.7 acres) independent state in the world, it is the spiritual and governmental center of the Roman Catholic Church. Therefore, the Vatican commands worldwide influence.

In the early days of shortwave, wireless pioneer Guglielmo Marconi personally helped the Vatican become an important early international shortwave broadcaster. The holiday season seems an appropriate time to check out that station's interesting history.

Station HVJ, *Vatican Radio*, was installed in 1931 at the request of Pope Pius XI, pontiff of the Roman Catholic Church. It was Pius' hope to broadcast the message of his church to the world.

Who else but Marconi, Italy's (and the world's) most renowned expert on radio, would be summoned by His Holiness? He was asked to create a transmitter specifically for the Vatican's station. In response to being so honored, a 12-kW transmitter for HVJ was especially designed and built under the direct personal supervision of Marconi. In addition to its broadcasting capabilities, the original HVJ transmitter was designed for telegraphy. HVJ regularly handled point-to-point traffic, passing hundreds of messages daily.

HVJ was fully staffed by members of the clergy, representing several nationalities. The station's founding director, who supervised HVJ's installation and first three years of operation, was Father Guiseppe Gianfrancheschi. After Granfrancheschi's death in 1934, the new director became Father Filippo Soccorsi, S.J.

By 1938, the original Marconi transmitter had become too antiquated and limited in ability to meet HVJ's growing needs. The 1938 HVJ schedule included home programs in Latin, then there were programs in six modern languages beamed out to the world on 6030, 11740 and 15127 kHz. To meet HVJ's immediate needs and plans for the future, Soccorsi decided a new 10-channel Telefunken 50-kW transmitter needed to be purchased and put into service. The Marconi transmitter was mothballed and placed on reserve status.

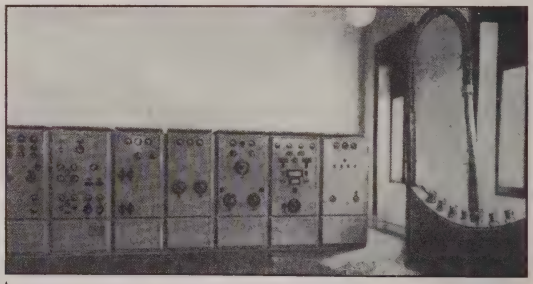
At that time, HVJ was moved into the former Vatican Observatory Building (situated at Castel Gandolfo, outside the city walls). It had an annex in the former summer retreat of Pope Leo XIII.

In the late 1940s, on the heels of World War II, worldwide interest in shortwave broadcasting grew rapidly. Countless World War II military surplus transmitters began turning up as shortwave broadcasting stations from Port-au-Prince to Port Moresby.

Nations, individuals, networks and everybody else had things to tell the world. Technological advances suddenly had made mass-produced, efficient shortwave receivers readily available. It became possible for many people to tune in those messages. HVJ was ready to join in the proceedings, and with a renewed postwar vigor!

By 1946, HVJ decided to dust off and patch up the creaky 15-year-old retired Marconi wireless rig, and crank it back up for full-time broadcast service! The venerable machine soon was chugging away again full tilt, going day and night on 5971 and 15095 kHz into an omnidirectional antenna.

At the same time, the big 50-gallon Tel-



▲ *The big Telefunken 50-kW shortwave transmitter installed at HVJ in 1938.*

◄ *The Reverend Filippo Soccorsi, S.J., who became the director of Vatican Radio in 1934, was responsible for expanding the station.*

Out Of Thin Air And Into The Thick Of Things.

THE DRAKE R8A

The Drake R8A World Band Communications Receiver. Turn it on, tune it in, and as easy as that, you're hearing world events as they happen… uncensored and complete. And with the R8A's astounding clarity, it's almost as if you're there. In fact, no other communications receiver puts you closer to the action in even the most distant parts of the world.

If you're a hobbyist, you'll marvel at the R8A's simplicity of operation. If you're an expert, you'll admire the high-powered features. The Drake R8A offers superior performance in a complete package that includes built-in filters and other unique features that have made Drake the foremost name in world band communications. The R8A from Drake…you've got to hear it to believe it.

DRAKE, FOR A WORLD OF DIFFERENCE.

Order Now Risk-Free!

15-DAY MONEY BACK TRIAL

We are so confident you'll be impressed with the R8A's performance, we'll give you a full refund on your factory direct order, less shipping charges, if the R8A doesn't meet or exceed your expectations. Call for complete details.

Order Today, Factory Direct or call for the dealer nearest you **1-800-937-2538**

DRAKE

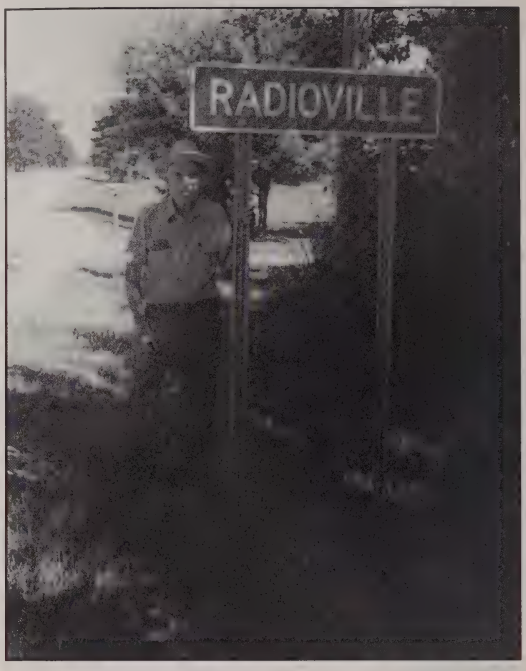
R.L. Drake Company, P.O. Box 3006, Miamisburg, Ohio 45343, U.S.A. ■ Sales Office: 513.866.2421 ■ Fax: 513.866.0806 ■ Service and Parts: 513.746.6990 ■ In Canada: 705.742.3122

© 1995 The R.L. Drake Company

DRAKE is a registered trademark of The R.L. Drake Company.

CIRCLE 114 ON READER SERVICE CARD

The antenna masts at HVJ, showing the old observatory at the lower right.

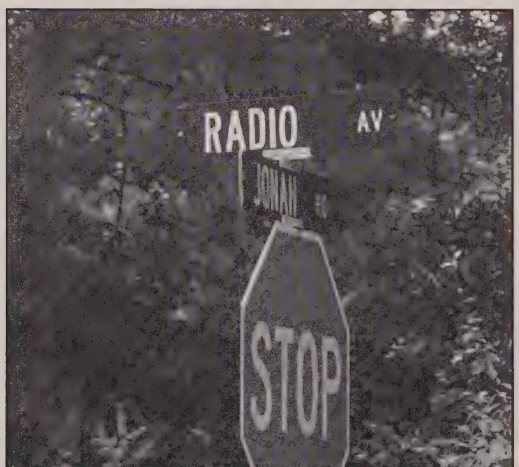


That's Ken Alberding of Wheatfield, Ind., displaying one of the new signs that made Radioville a reality after more than 60 years as only a forgotten speck on a map. (Photo by Estella Tetzloff)

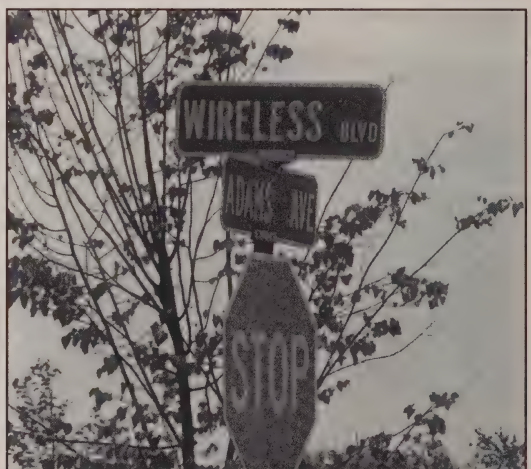
efunken transmitter was shifted out of first gear. No more casual loafing along on three frequencies! It was put to operating on 6190, 9660, 11740, 15120, 17450 and 17835 kHz. Its antennas included an omnidirectional tunable to any of its operating frequencies. There were dipoles for the 6 and 9 MHz frequencies (31- and 49-meter bands), plus four directional antennas to beam programs to the Americas, Australia, China, Japan, Egypt and India.

Since then, HVJ has continued to grow, although the 12-kW Marconi transmitter was mercifully put out to pasture many years ago.

Modern Vatican Radio operates on three mediumwave frequencies plus four FM channels. There is a shortwave trans-



Radio Avenue is a great address for any communications buff. This one is in Rocky Point, N.Y.



Wouldn't you like to live on Wireless Boulevard, Hauppauge, N.Y.? There isn't a single home there!

On the bench...

P30 Probe $30.00

8040

8040.....$999.

The Only Portable Battery Powered Counter With KVG .05ppm Oven!

•Bench / Portable Counter •Dual 50 & 1Meg Ohm input amplifiers with AC/DC coupling, +/- Polarity, Trigger Level adjust, Low Pass Filter & Attenuator •Internal clock output/ external clock input •Serial Data Interface •Digital Filter and Auto Capture •10 Digit Backlit Display •16 Segment RF Bargraph •250MHz direct count •MultiFunction: Frequency, Period, Ratio, and Time Interval Measurement •Rapid charge NiCads, 1 hour charge, 5 hour discharge

3000A+.....$349.

•Frequency Counter •10Hz - 3GHz range •Digital Filter reduces random noise & oscillation •Digital Auto Capture locks on first reading to pass filter •6 hour NiCads •10 Digit Backlit LCD •16 segment RF bargraph •250MHz direct count •Serial Data Interface •Multi Function: Period, Ratio, and Time Interval Measurement •Dual High Impedance Amplifiers •Built in High Pass Filter •Arm store button stores & recalls frequencies from a three register stack.

Optional: +/-.2ppm TCXO Timebase.....$100.00

M1.....$249.

•Frequency Counter •10Hz - 2.8GHz •Digital Filter and Auto Capture •5 hour NiCad operation •10 digit backlit LCD display •16 segment RF bargraph •250MHz direct count •Serial Data Port permits data logging through optional Converter & Software •Holds up to 3 frequencies in memory.

in the field...

the all new Cub

CC30 Case $10.00

or just about

The CUB.....$149.

Introducing the new CUB pocket sized frequency counter. The CUB is ideal for communications, surveillance, and recreational monitoring applications. From 10MHz-2.8GHz, the CUB has maximized sensitivity for detecting RF in the near field and displaying the frequency detected. The CUB features a 9 digit LCD display for best visibility and longer battery life, 8 selectable gate times with a high speed .0001 second gate, Digital Filter that reduces false counts and Random Noise, Digital Auto Capture that acts like an intelligent hold button, allowing any frequency captured to remain displayed as long as needed. Simplicity, sophistication and accuracy. Make the CUB your choice for a frequency counter.

CUB

The Handi-Counter Accessory Package: CC30 Case, Telescoping WhipAntenna, and Belt Clip.....$25.00

anywhere.

OPTOELECTRONICS

5821 NE 14th Avenue • Ft. Lauderdale Fl. 33334

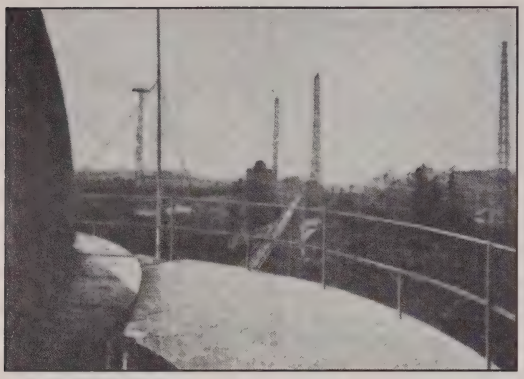
Contact Factory for shipping prices. Visa, MasterCard, & C.O.D. (Cash or Money Order)

All prices and specifications subject to change without notice or obligation. Antennas Not Included.

ORDER LINE: 800-327-5912 TEL. 305-771-2050 FAX 305-771-2052

MADE IN U.S.A

CIRCLE 167 ON READER SERVICE CARD



Another view of HVJ's antennas, this time from atop the observatory.

Bustling downtown Radioville. Ray "Bud" Schroeder owns most of the local businesses. These include the bowling alley, diner, TV shop and lawn mower repair shop. (Photo by John R. Ghrist., Ill.)

mitter running 80 kW at the Vatican, and ones operating with as much as 500 kW at Galeria. Religious and news programming are broadcast over HVJ. Signals are beamed out in English and many other languages (including Esperanto, the artificial language) on 31 frequencies to the Americas, Europe, Middle East, Africa, Australia and Asia. QSL cards are sent in response to reception reports.

HVJ has been continuously on the international shortwave scene for 64 years, which puts them on the short list of genuine SWBC pioneers.

Hoosier Little Whozis

Within a few miles of the *POP'COMM* offices there are great streets to live on if you're a communications nut. There's Marconi Boulevard, Radio Avenue, even Wireless Boulevard. But wouldn't it really be impressive to tell people you hailed from a town called Radioville? Now, *that's* an ideal location for a communications hobbyist!

That occurred to *POP'COMM* reader and radio historian John R. Ghrist, N9HVF, of Elgin, Ill., when he noticed a place shown as Radioville on Indiana's official state highway map.

Ghrist is the author of *Valley Voices* (published by Crossroads Communications, Carpentersville, Ill.), a history of broadcasting in the Chicago area west to Rock-

TUCKER ELECTRONICS

CARRIES THE COMPLETE ICOM RECEIVER LINEUP!

ICOM

Give us a call today for a complete catalog of these and many other great products to complete your listening post.

TUCKER ELECTRONICS: YOUR COMPLETE SOURCE FOR ICOM RECEIVERS!

Icom IC-R71A

Icom IC-R100

Icom IC-R7100A12

Icom IC-R1-15

Call Now: 800-527-4642

TUCKER ELECTRONICS

1801 Reserve Street, Garland, TX 75042 • P.O. Box 551419, Dallas, TX 75355-1419 • In Dallas: 214-348-8800 • Fax 24 hs. in English, Español, Francais, und auf Deutsch: 214-348-0367

CIRCLE 87 ON READER SERVICE CARD

If you operate VHF, the publishers of CQ have something very exciting for you!

IT'S NEW!

CQ VHF
Ham Radio
Above 50 MHz
■ Repeaters & FM ■ Packet radio ■ Amateur satellites ■ Amateur television ■ VHF/UHF "weak signal" ■ and much more!

In every issue you'll find...
Operating articles
Technical articles
Beginner's articles
Product reviews
Projects you can build
New things to try
News and Columns

covering topics like...
- Repeaters & FM
- Packet radio
- Amateur satellites
- Amateur television
- VHF/UHF "weak signal"

and much more!

SUBSCRIBE TODAY!

introducing...

the magazine for

VHF, UHF *and beyond!*

From FM repeaters to the high-tech frontiers of microwave and laser communications, CQ VHF takes you there!

FOR HAM RADIO ABOVE 50 MHz!

NEW!

Subscribe to CQ VHF at the low introductory price of only $19.95!

OR

Take advantage of the CQ Combo offer and receive a FREE GIFT!

GET ALL THREE!

only $44.90

Combo Offer:

subscribe to CQ VHF at the introductory price (regularly priced at $21.95)	$19.95
subscribe to CQ The Radio Amateur's Journal	$24.95
get The 1996 CQ Equipment Buyer's Guide	Free ($5.95 value)

all three only $44.90!

Act Now! Supplies of Buyer's Guide's are Limited.

ford, Ill., and northwestern Indiana.

Soon enough, Ghrist learned it was much easier locating it on the state highway map than actually finding Radioville itself. You have travel to Indiana's rural Pulaski County, then drive north on U.S. Route 421 from Medaryville toward San Pierre. Pay close attention, because once you arrive at San Pierre, it means you've managed to miss Radioville!

Though only 50 miles southeast of Chicago, U.S. Route 421 in that area is a lonely stretch of road through swamps and woods, bordered on the west by a game preserve. Near where a small roadway called County Road 100N crosses Route 421, there are a few scattered farms, mobile homes and a bowling alley. That's Radioville, even though there's no post office. Ghrist learned that Radioville is elusive. Like a radio signal, it manages to exist while remaining intangible. But why?

Upon investigation, Ghrist found that a large tract there had been owned by a Missouri couple. In 1932, under the name of *Radioville*, they filed a plat (survey dividing an area into individual building lots) of the property. This partitioned Radioville into 354 parcels of various sizes. Then, Henry Ullrich, a relative of the couple, who lived in River Forest, Ill., began selling the lots. They were sold, mostly sight unseen, to Chicago residents.

Unscrupulous land promoters have a history of concocting schemes to huckster distant worthless lots to gullible residents of big cities. Sales brochures invariably point out low prices, promising the imminent arrival of water, electricity, tree-lined streets, roads, stores, schools and public transportation. Developers show many beautiful homes soon to be built. Naive people can't wait to shell out cash.

Radioville had been such a scam, like the worthless Florida swamps sold as building lots in the 1920s, as it also has been elsewhere when rock-strewn, marsh, mountainside, desert and other junk land has been hawked by glib promoters assuring desirable home sites and excellent investment opportunities.

Radioville never was developed, so the lots were utterly useless. Buyers had no idea what they purchased and soon abandoned their land, defaulted on property taxes, or tried to get their money back. That was the end of Radioville, but the 1932 survey has remained valid all these years and still appears on official state highway maps.

Nobody living in that area today knows for sure why the name Radioville was used, but there are a few theories. Local farmer Ken Alberding recalls Henry Ullrich once told him of being interested in medical radio diathermy. Alberding theorizes that's what inspired the name. Ghrist has several opinions, too. One is that in 1932 the word *radio* sparked interest because it represented high-tech family entertainment.

Our own suspicion is that Radioville had been deliberately timed and so named to cash in on the prestige of New York City's famed Radio City, which also had begun construction that same year, 1932. Radio City was bankrolled at $50 million by the Rockefellers. In 1932, they were the wealthiest and most philanthropic family in the nation. Radio City received enormous and constant media attention. During the Great Depression, Radio City was claimed to be a project to provide employment to many people.

Radio City and Radioville; the names are so similar. Hardly seems a coincidence. For all we know, Radioville purchasers may have been either confused or deliberately misled into thinking they were investing in Radio City, or felt they were buying into another Rockefeller project.

Intrigued by coming upon a "lost," or at least forgotten, community having such a significant name, John Ghrist embarked upon a mission to rescue Radioville from more than 60 years of virtual obscurity. He wanted to provide it with a meaningful and tangible identity. For one thing, he wrote a story about Radioville in Chuck Schaden's *Nostalgia Digest* magazine. Next, John contacted the Indiana Department of Transportation, pointing out that the unincorporated community appears on their maps, yet has no highway signs showing its name. Because of John's letter, the Indiana DOT agreed to erect *Radioville* road signs.

The Portage (Indiana) Amateur Radio Club then decided it was appropriate to visit Radioville to celebrate the anniversary of its founding. Under the direction of Gus Flassig, W9HXO, the club was planning to drive its mobile unit to Radioville and operate a special event station there, issuing special Radioville QSL cards.

We aren't implying that John Ghrist's discovery of lost and forgotten Radioville is on a par with the French locating Angkor Wat in 1860, or Bingham's 1911 unearthing of Machu Picchu. Nevertheless, the story of his spotting this uniquely named place, researching it, then rescuing it from limbo, was unusual, heartwarming and very human. This special holiday column seemed just the right time to announce that Radioville now exists with a recognizable and tangible identity.

The road to Radioville is the only road Hope and Crosby never found. *No problem!* But we have finally located it, so let's look forward to the next issue of *POP'COMM* when we can again meet on that road. Until then, here's my personal wish to you for the best holiday season ever. ■

SURVEILLANCE

FM TRANSMITTERS MINI (KITS)
- 3-VOLT FM XMTR, up to 300 ft. indoors, 1500 ft. outdoors
- PHONE XMTR, range to 500 ft., uses phone-line power
- Sound-Activated XMTR, range to 500 ft.
- 2-STAGE XMTR, 9-Volt, very powerful

All above require simple soldering at 2 to 4 places. **$29.95** ea.**

TELE FM WIRELESS MONITORING SYSTEM. (Kit) **$99.00***

TELE CALL FORWARDER. Transfers incoming calls. **$99.00***

CALLER ID. Registers incoming number. **$99.00***

TEL REGISTER WITH PRINTER. Records dialed number, duration, and prints record. **$139.00***

12-HOUR LONG-PLAY RECORDER. Modified Panasonic. Records 6 hrs. on each side of 120 tape (supplied). Compatible with VOX and Tel Rec Adapter. **$119.00***

VOX VOICE-ACTIVATED SWITCH. Makes recorder self-activating with voices or other sounds. **$28.50****

TELE RECORDING ADAPTER. Records incoming and outgoing calls. **$28.50****

TELEPHONE SCRAMBLERS. Over 4,000 separate codes. **$199.00***

VOICE CHANGER. Changes man's voice to lady's and vice versa. **$49.00***

For Shipping & Handling add *$5.00 and **$2.00 per item. Colo. residents add sales tax. Mail Order, VISA, M/C, COD's o.k. Inquire for dealer prices. Free catalog.

MUCH, MUCH MORE — OUR 25TH YEAR!

TOLL FREE 1-800-926-2488

A.M.C. SALES, INC.

193 Vaquero Dr., Boulder, CO 80303
Tel: (303) 499-5405, Fax: (303) 494-4924
Mon.-Fri. 8 a.m.-5 p.m. Mtn. Time

CIRCLE 51 ON READER SERVICE CARD

JO GUNN Antennas

THE BEST IN PERFORMANCE & QUALITY!

5 + 5 STAR
UPS SHIPPABLE

Other Models & Sizes Available in 10 or 11 Meters

JO GUNN Enterprises
Route 1 Box 32C, Old Hwy 82
Ethelsville, Alabama 35461
(205) 658-2229 fax (205) 658-2259

Hours: 9am - 5pm (CST) Monday - Friday

Call or send $2 for Complete Catalog and Pricing of Antenna

DEALER INQUIRIES, PLEASE CALL

Snaring the Sidebanders

These Shortwave Broadcasters Use a Mode Other Than AM

BY GERRY L. DEXTER

Single sideband (SSB) has been the mode of choice for amateur radio operators and utility communications stations since the transmission method was developed several decades ago. For most of this time, SSB reception capabilities were limited mostly to the more expensive communications receivers—the type of radio average shortwave listeners did not own.

Thus, it didn't make a whole lot of sense for an international shortwave broadcaster to use a mode most of its listeners couldn't make any sense of, even though it was a better system.

But there have been a lot of changes in receiver technology over the last decade or more, and things are beginning to change. Today even a relatively inexpensive shortwave set can make sense out of an SSB signal, which has caused a number of SWBC stations to begin trying out SSB as a means of getting a cleaner, interference-free signal to their listeners.

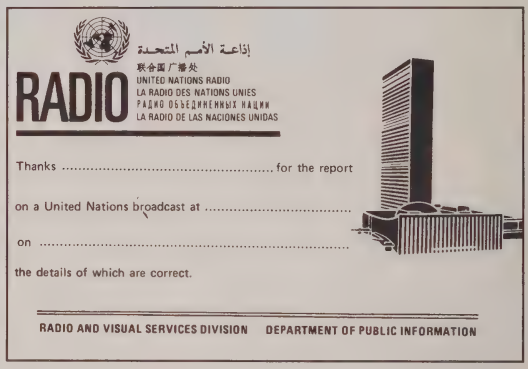
Even so, the SWBC bands are hardly full of SSB broadcast signals. The quantity is more akin to the last few drops of lemonade in the bottom of the pitcher. Still, we'll bet there's more SSB broadcast activity on the air these days than you realize. Some broadcasts have been going on for a long time, irrespective of the state of receiver technology. Ironically, one of the first to make regular use of SSB broadcasts was Radio Sweden using a couple of frequencies to relay its home service in SSB for a number of years. But when other stations began to get interested in using the mode, Radio Sweden discontinued it!

Some stations are running their SSB broadcasts as tests, some are actually broadcast feeders, and others are very irregular in nature. Many pirate stations use single sideband but, because there are so many of them and they tend to come and go, we're going to ignore that segment.

So flip on your BFO or set your SSB selector to upper or lower sideband and let's check out SSB shortwave broadcasts. Times are in UTC and subject to change without notice, as are the frequencies listed. (There's no particular order to the countries and stations listed here.)

ICELAND—All shortwave broadcasts of the Icelandic National Broadcasting Service are in SSB and virtually always have been, since servicing the Icelandic fishing fleet is the main reason Iceland is on shortwave.

Radio Free Europe/Radio Liberty is one of several major broadcasters you may run across using single-sideband feeders.


إذاعة الأمم المتحدة
联合国广播处
RADIO
UNITED NATIONS RADIO
LA RADIO DES NATIONS UNIES
РАДИО ОБЪЕДИНЕННЫХ НАЦИЙ
LA RADIO DE LAS NACIONES UNIDAS
Thanks ..... for the report
on a United Nations broadcast at .....
on .....
the details of which are correct.
RADIO AND VISUAL SERVICES DIVISION DEPARTMENT OF PUBLIC INFORMATION

United Nations Radio, Geneva, airs a broadcast in sideband three times a day.

Radio St. Helena runs its shortwave special in upper sideband every year or so.

INBS has five brief broadcasts each day: to North America at 1410-1440 and 1935-2010 on 13860 and 15770, also 2300-2335 on 11402 and 13860.

INBS is on the air to Europe at 1215-1300 on 13860, 13870 and 15775 and at 1855-1930 on 9300, 11402 and 13860. All broadcasts are in Icelandic and are transmitted in upper sideband (USB), with a power of 10 kW.

BOSNIA-HERCEGOVINA—Radio Bosnia-Hercegovina is listed with a USB transmission on 6890 on a 24-hour-a-day basis. More recently, it's been spotted on 7108 USB. Be careful though, as the station also is running an AM transmitter on 7105 at various times. An exact schedule isn't available, but try them during our local evenings.

ARGENTINA—Radio Nacional is reported to be using an SSB relay operating on 5860, in parallel with its normal 6180 channel at 1100, and probably at other hours, too. Check during our evenings.

Several Argentine mediumwave stations have a shortwave feeder, mostly as a way of relaying their local programming to Argentines in Antarctica. Radio Rivadavia made regular use of shortwave until a couple of years ago. Now it is active again, reported using 5081 at various times. Check for the following on weekend afternoons: Radio El Mundo on 6675.5 or 10063.5; Radio Colon on 8965; Radio America, Radio Continental and Radio Rivadavia, all of which use 15780 at times, and Radio Rivadavia and Radio del Plata on 20276. All are in USB except 20276, which is LSB. Understand that these are very chancy things. To log them you must be prepared to make regular checks, probably over a long period of time.

CUBA—Radio Havana Cuba, despite what must be an endless crisis in parts and equipment, has been airing regular SSB broadcasts for the past couple of years. Earlier this year, RHC was running USB tests to Europe from 2100-2300 on frequencies such as 6180, 9800, 9805, 11705, 11760, 11875 and 11950. English to North America is regularly aired in USB at 0000-0500 on 9830 (sometimes 9820).

PHILIPPINES—We'd have to class this as a semi-broadcaster since it's not a listed shortwave outlet but rather a utility station carrying a local mediumwave broadcaster. DZMN, Manilla, (630 kHz) is being carried by Bulan Coastal Radio on 1317 USB at around 2300. The broadcast is in Tagalog with an English ID at sign-off. It may be that this relay is not aired on any kind of a regular basis.

GEORGIA—Abkhaz Radio, in this former Soviet Republic, was heard sometime ago on 9372.5 lower sideband, from about 0530-0630 in local languages.

COSTA RICA—Radio For Peace International has been active with SSB transmissions for some time now. 9400 USB is on the air 24 hours a day. Also check 12150 (which was used on an experimental basis) from 0000 to 1300, and 15050 from 0000 to 1200 and 17905 at 1200-2400. These latter two run just 2 kW.

An easy-to-catch VOA feeder is on 7651 in the evenings.

ECUADOR—HCJB also has been running single sideband transmitters for a while. 17490 and 21455 (1.5 kW) are active for much of the day and night, carrying HCJB's transmissions in various languages to different parts of the world. It takes no tricks or luck to hear this one.

AUSTRALIA—Australian Armed Forces Radio is using some single-sideband transmissions to reach its people serving overseas. The last schedule we've seen shows broadcasts from Exmouth Naval Base on 18193 upper sideband at 0800-1000 and 1400-1600 on 9743 USB. From Belconnen, broadcasts are beamed from 0100-0300, 0430-0630 and 1000-1200 on 13525 USB.

SWITZERLAND—United Nations Radio from Geneva has broadcasts in the SSB mode daily at 0600 and 1800 on 10461. A third broadcast airs on 17520 at 1200. The UN transmitter runs 15 kW.

NICARAGUA—Radio Miskut began as a clandestine station during the Nicaraguan civil war. Now it's a licensed station but it seems to have trouble staying active on shortwave. When all is well, it uses 5770 USB and runs to sign-off around 2330.

NEW ZEALAND—We'll stick in one pirate station after all, since it's a foreign catch. KIWI Radio—when active—sometimes uses 7445 USB. Check Saturday nights our time (Sunday UTC) between 0600 and 0800. Holidays like Christmas and New Year's, which are observed worldwide, might offer the best chance.

CLANDESTINE—The Voice of Kashmir Freedom is said to have SSB transmissions on 5300 upper sideband from 0230-0330 and 1430-1530. Unfortunately, your chances of hearing this in North America are about as close to zero as it's impossible to get.

ST. HELENA—Radio St. Helena doesn't operate on shortwave—except for a couple of hours every year or two when they air a special for DXers. The next one is scheduled for sometime in October 1996. It's likely they'll use 11092.5 from 2000-2300 on a Friday or Saturday during that month. The station takes phone calls from listeners and issues a terrific QSL card for correct reception reports.

FINLAND—Radio Finland International has been playing the SSB game a bit. You might check 17740 USB for broadcasts from 1230-1300, 1330-1400 and 1430-1500.

ARMENIA—Armenian Radio is scheduled with a transmission in upper sideband at 0345-0400 on 10344.

KIRIBATI—Radio Kiribati's shortwave transmitter uses upper sideband on 9825 (alternate: 9820). This Pacific Island station signs on at or just before 0600 and, among other things, features news from the BBC. North American DXers report this one often, despite being only 1 kW.

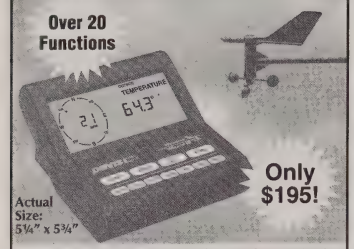
UNITED STATES—The Voice of America often can be heard broadcasting over its feeder transmitters for rebroadcast by its various relay stations. One of the easiest to hear is 7651 (from Greenville) during the evenings. The upper and lower sidebands usually carry different program services. 7651, of course, is only one of many frequencies used for this purpose.

OTHER FEEDERS—Although many of the international broadcast feeders that used to be found on shortwave bands have been replaced by satellite feeds, some still are maintained as a backup, or are used in special cases. Radio Free Europe/Radio Liberty, The Voice of Russia, Deutsche Welle and some other major broadcasters still can be found using single-sideband feeders. There are many frequencies still assigned for this purpose. If you decide to go after them, you'll really benefit by consulting a comprehensive utility listing, such as *Ferrell's Confidential Frequency List*.

We didn't cover all the single-sideband broadcast transmissions currently on shortwave, but the above should be more than enough to get you started. Good luck in snaring the sidebanders! ■

Just the thing for people who want to get weather information first hand!

Over 20 Functions



Only $195!

Actual Size: 5¼" x 5¾"

Haven't you always wanted a weather station? The Weather Wizard III combines all the most requested features into one incredible package!

FEATURES INCLUDE:

- Inside & Outside Temps
- Wind Speed & Direction
- Compass Rose
- Wind Chill
- Alarms
- Highs & Lows
- Instant Metric Conversions
- Optional PC Interface ($165)

$75 Optional Rain Collector

Order today:

1-800-678-3669

M-F 7 a.m. to 5:30 p.m. Pacific Time • CM660J
FAX 1-510-670-0589 • M/C and VISA
Add $8.00 for Shipping and Handling
One-year warranty • 30-day money-back guarantee

DAVIS INSTRUMENTS
3465 Diablo Ave., Hayward, CA 94545
Our 30th Year! USA Made!

CIRCLE 58 ON READER SERVICE CARD

VIDEO SYNC GENERATOR

Restores Horizontal and Vertical Sync Lines from Distorted Analogue Video Formats

For Free Information Package on Completed Units and Pricing

• Call Toll Free •
1-800-236-5778

R.C. Distributing • PO Box 552 • South Bend, IN 46624

CIRCLE 76 ON READER SERVICE CARD

CB RADIO OWNERS!

We specialize in a wide variety of technical information, parts and services for CB radios. 10-Meter and FM conversion kits, repair books, plans, high-performance accessories. Thousands of satisfied customers since 1976! Catalog $3.

CBC INTERNATIONAL
P.O. BOX 31500PC, PHOENIX, AZ 85046

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

The MFJ Enterprises MFJ-9420 20-meter SSB travel radio is great for hams on the go.

Pack This Ham Rig in Your Suitcase

One of the worse parts about going on vacation or a business trip is that it's always tough trying to find room to pack all the radio equipment in with the essentials. After the clothes and toiletries are packed with the cellphone, you still need to stow away the toys for idle hours.

MFJ Enterprises knows hams love to operate on HF, but the bands don't typically offer the convenience of portability like 2-meter and UHF HTs. That shouldn't stop anyone! Not only is the MFJ-9420 a compact 20-meter SSB transceiver, it also carries a decent price tag. While handheld radios require users to cart along chargers, the MFJ-9420 can operate on the worldwide bands on easy-to-carry D cells. If you want to conserve on the batteries, a wall adapter power supply can keep the rig on the air. Just leave a little extra room in your suitcase for a microphone and antenna.

According to a news release from MFJ, the rig's exclusive Constant Current speech processor cuts through noise and QRM like more powerful radios. The MFJ-9420 also has a sensitive audio amplifier and features a quiet, double-balanced mixer front end, single-conversion clarity and ample gain with a powerful audio amplifier. All put together, it should make it easy to get on the air from your hotel room or from the car.

On the receive side, you should have no trouble hearing the receiver even in noise-populated locations as the rig's big audio comes from a special Signetics audio chip and a rugged 3-inch speaker.

The MFJ 20-meter rig also has a calibrated S-meter (not a bargraph) to help zero in on the best beam heading as well as to monitor speech processing levels while transmitting. The radio is effortlessly tuned with a custom-built reduction drive ball-bearing VFO capacitor.

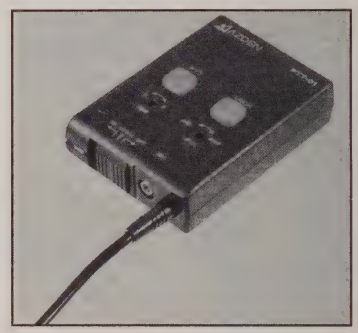
If you are concerned about what to load up as an antenna on this rig, have no fear! The bulletproof Motorola PA transistor runs cool, we're told, and easily tolerates a 3:1 VSWR as well as accidental feedline shorts or opens.

The MFJ-9420 comes housed in a tough vinyl-clad case with a brushed aluminum panel. It also features a premium plate-through PC board. The transceiver also is covered by MFJ's "no matter what" one-year unconditional guarantee. This handy rig sells for only $219.95.

For more information or to place an order, contact any MFJ dealer or MFJ Enterprises Inc., P.O. Box 494, Mississippi State, MS 39762; orders, (800) 647-1800; information, (601) 323-5869; or fax, (601) 323-6551.

Push Comes to Talk With This Handy Switch

Any radio can enjoy the advantages of remote push-to-talk (PTT) operation, variable microphone gain, adjustable frequency response and automatic timed shutoff



Azden's universal push-to-talk switch can give any radio the advantage of remote PTT operation with other features.

with this unique device that has been released by the Communications Division of Azden Corp.

The folks at Azden have a line of unique mobile and handheld ham rigs for the 10-, 6- and 2-meter bands, as well as the 222- and 440-MHz bands. They also sell commercial radios and accessories.

The PTT-01 is usable with all types of microphones, including dynamic and electret. A removable belt clip, Velcro tape and a soft desk pad allow universal mounting.

An off-local-DX switch allows either flat frequency or a peaked response at 2 kHz, both with adjustable gain to match most microphones to most radios. A lock button permits hands-off operation and a built-in adjustable timer turns off the transmitter after a preset time of one to five minutes.

The PTT-01 measures 2.4 inches wide, 0.87 inches high and 3.35 inches deep. A 9-volt alkaline battery powers the unit, which carries a suggested list price of $40.

For more information, talk with Sid

Wolin, manager of Azden's Communications Division at (516) 328-7501, or write to him at 147 New Hyde Park Rd., Franklin Square, NY 11010; fax (516) 328-7506.

Tune a Tone With CTCSS Encoder

If you use ham radio, General Mobile Radio Service or business radio and you travel, the Communications Specialists TE-32 multitone CTCSS encoder will help you access repeaters or other users' receivers.

CommSpec, as hams and others call the firm, has upgraded their formerly popular SS-32P CTCSS tone encoder and it looks like a winner. A front-dial rotary switch allows direct access to all 32 standard EIA subaudible tones from 67.0 to 203.5 Hz. You won't be able to access six other common tones from 203.5 to 250.3, however.

The TE-32 is housed in a high-impact

Communications Specialists Inc.'s TE-32 multitone encoder allows radio users to select the CTCSS tone they need to access repeaters.

plastic case that sizes up to 5.25 inches by 3.3 inches by 1.7 inches. It comes supplied with a mounting bracket, hardware and a 3-foot shielded cable. The supplies allow this unit to be used not only in a mobile application, but also on the test bench.

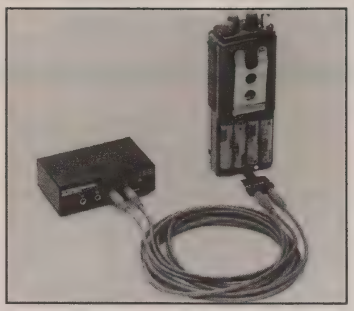
And, if you are used to paying around $30 for a CTCSS board to open up repeaters on the air, take note that this unit, which easily allows you access to 32 tones, comes with a $49.95 price tag. It's available from stock and comes with CommSpec's one-year "no-hassle" warranty.

For more information, contact Communications Specialists Inc., 426 W. Taft Ave., Orange, CA 92665-4296; phone, (800) 854-0547 or (714) 998-3021; or fax, (800) 850-0547 or (714) 974-3420.

Computer Control Interface for Receivers

Optoelectronics has come out with the CX12AR Computer Control Interface for the AOR AR8000 and CI-V receivers such as the Icom R7000 and R7100. The CX-12AR not only allows CI-V to RS-232C conversion, it also provides complete interfacing for computer control of the IC-R7000 and IC-R7100, which Icom's CT17 device does not offer.

The CX12AR has two operating modes, which can be switched between full- and half-duplex. The dedicated squelch status



Optoelectronics' CX12AR Computer Control Interface allows some VHF/UHF receivers to be connected to a computer for control purposes.

input is wired for high-speed scanning and a software-controlled tape recorder control output also is offered on the unit. The CX-12AR converts TTL serial interface signal levels compatible with most personal computers, while allowing up to four different Optoelectronics devices equipped with serial ports to be connected to one computer port in a star network configuration.

Opto's CX12AR can be used to download memory from Opto's Scout (see review in June's *POP'COMM*) to a computer. After downloading the frequencies, they can be checked against the PerCon Spectrum CD-ROM FCC database, too. When switched in the RS-232 mode, the CX-12AR can be used as a datalogging device for the popular Opto M1 frequency counter. The CX12AR also has a software-controlled tape recorder output.

While a demo version of ScanStar's software is included with the device, other programs such as DataFile's Probe (see review in September's *POP'COMM*) will do a good job, too, when used in conjunction with the OptoScan 456/535 boards, the Icom R7000 computer control and the AOR 8000.

The CX12AR carries a suggested retail price of $99. For more information, contact Optoelectronics Inc., 5821 N.E. 14th Ave., Fort Lauderdale, FL 33334; phone, (305) 771-2050; fax, (305) 771-2052.

Send in the News

If you are a manufacturer or developer of products of interest to our readers, you are invited to send us news of any new products. News releases must be accompanied by a photo of the product and should include contact phone numbers for our staff, as well as our readers.

Listings in New Products are free, however, our editors reserve the right to rewrite and edit information to conform with our style. Send information to: New Products, Popular Communications, 76 N. Broadway, Hicksville, NY 11801-2909.

Products also will be considered for testing in our product reviews.

Coming this Fall!

MONITOR AMERICA – Third Edition

The All-in-One National Scanning Directory

Frequencies, codes, maps, Id's, and system descriptions for public safety and business radio systems.

Over 1,000 Pages Now Cover Every County in the Nation!

For more information on this and other fine scanner products, call

SCANNER MASTER

1-800-722-6701

"Monitor America, an absolute must for the road, and indispensible at home, is the national bible of communications!"

CIRCLE 81 ON READER SERVICE CARD

NEW! ONLY $99.97

High performance, full featured PC scanning on Windows™or Windows 95!

Scan*Star SE Edition for Windows:
- o Spectrum analysis & printing on selected receivers.
- o AR8000 auto-unblock and band plan edit.
- o Scan, search and log by PL/DPL.
- o Mini status display for minimum desktop footprint.
- o Full featured editor, all settings are per-channel.
- o Highest performance Windows scanning.
- o Log air time, hit count, PL/DPL/DTMF per channel.
- o Browse & import from DBASE files, Grove or Percon.
- o Blend up to 25 groups and search ranges.
- o Tactical display for all-in-view picture.
- o Import & export data to and from other formats.
- o Much more!

Scan*Star Plus for Windows - SE features plus:
- o User defined database fields.
- o Search-slave handoff with priority & preemption.
- o Sub list scans for split channels and trunk groups.
- o Scan with up to 10 radios at the same time.
- o Monitoring assistant with frequency following.

Equipment Supported:
OS456, OS535, R7100, R7000, R9000, FRG9600, DC440, AR3000, AR8000, NRD535, NRD525, R8, R8A.

System Requirements:
IBM PC 386/486/586 with 4 MEG ram, hard disk, VGA, mouse, serial ports. Windows 3.1 or 95. Cables and interfaces for radios may also be required.

Scan*Star Plus [Windows] $159.97
Scan*Star SE [Windows] $ 99.97
Commercial Edition [DOS] $129.97
Add S/H & TAX. Visa, MC, AMEX cards accepted. No COD.

1-408-926-5630

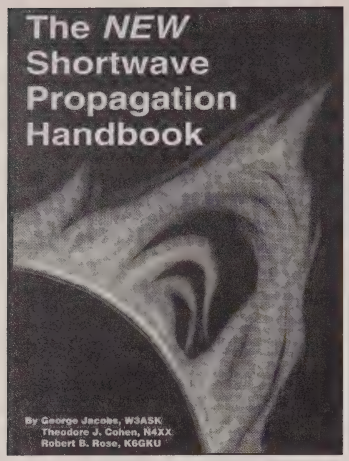
Signal Intelligence
The Leader in PC Radio Scanning
PO BOX 640891
San Jose CA 95164

FREE DEMO
Download from Scan*Star BBS
1-408-258-6462
URL: http://www.scanstar.com

CIRCLE 83 ON READER SERVICE CARD

BOOKS YOU'LL LIKE

BY R.L. SLATTERY



On a Solar Cycle Built for You

Have you been wondering when HF DX will return in all of its glory? Those signals are just around the bend, getting stronger for upcoming Solar Cycle 23.

You can find out all about the why, how and when of such things in *The New Shortwave Propagation Handbook*, by George Jacobs, W3ASK; Theodore J. Cohen, N4XX; and Robert B. Rose, K6GKU. The previous edition of this book explained the last solar cycle DX festival; this completely revised and updated volume prepares you to take full advantage of the DX on the way.

The authors lay the groundwork with a clear description of ionospheric signal propagation basics. This includes unusual HF and VHF occurrences encountered by hams and monitors. Then they get into predictions for DX conditions in the forthcoming solar cycle, and explain how their forecasting was done. They even show you how to calculate DX propagation in order to select the proper hour and band for maximum signals to or from a particular area.

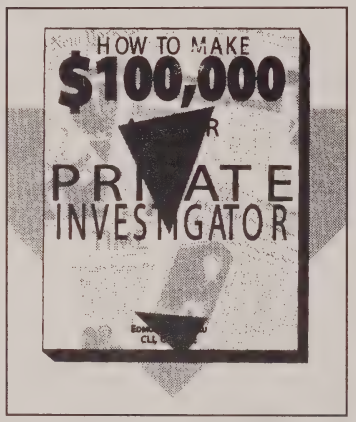
There are scores of tables and charts, and you will learn how to prepare do-it-yourself propagation predictions and charts. The authors also provide a wealth of information regarding reference sources, propagation prediction software, and an overview of the propagation services provided by station WWV. All this, plus stunning photography of solar flare activity.

Here's a useful handbook that is the most comprehensive source of HF propagation written for the hobby communicator.

The New Shortwave Propagation Handbook is $19.95, plus $4 shipping and handling. N.Y. State residents add applicable sales tax. Order it through your local dealer or from CQ Communications Inc., 76 N. Broadway, Hicksville, NY 11801. AMEX/VISA/MC/Discover accepted. Toll-free phone orders: (800) 853-9797.

Just the Fax, Ma'am...

Your vision of a private investigator might be TV's Jim Rockford being shoved down a flight of stairs by someone named Bruno. Delete that 1970s image. Communications technologies now have made private investigation a full-time or part-time career that may be successfully and lucratively pursued entirely from the comfort and safety of your home or office.



If you enjoy monitoring a scanner, chances are you'll also find being a P.I. fascinating. All you need is access to a telephone, fax and a computer/modem. In the late 1990s, those are the basic tools of the effective P.I.

How to Make $100,000 a Year As a Private Investigator, by Edmund J. Pankau, is an illustrated 128-page how-to manual. Written by a P.I. with 20 years experience, it shows how an individual with communications access can be a part of one of the fastest growing businesses of the decade. The profits are related to a person's ability to perform. There's no overhead and no inventory.

He explains that the big money today is made being a "data detective." That means, tracking down missing persons, locating hidden assets, insurance fraud and worker's compensation matters, developing trial cases, checking personal and business backgrounds of everyone from credit card applicants to prospective spouses to political aspirants.

Pankau tells you how to get started and attract clients. He explains where to (and where *not* to) advertise; discusses which specific businesses, industries and governmental agencies are crying for data detectives; and defines the essential tools that must be mastered in order to succeed. He provides information on reference sources and P.I. networks.

Most of Pankau's handbook is devoted to explaining how to perform effective investigations using available technologies. His suggestions are intelligent and perceptive. A few are cleverly sneaky. This information is well presented. There also are sample forms and contract forms provided in Pankau's well-rounded manual.

How to Make $100,000 a Year As a Private Investigator is $19.95, plus $5 shipping/handling ($6 to Canada). N.Y. State residents please add $2.12 tax. Order from CRB Research Books Inc., P.O. Box 56, Commack, NY 11725-0056. VISA/MC welcomed. Toll-free order line: (800) 656-0056. Canada/AK/HI phone orders: (516) 543-9169.

Make Your System 7.5 Mac Run Like a 10!

Mac users love their machines, and it's easy to understand why. With a click of the mouse, users can send e-mail, access

a BBS, hop into the 'Net, or do almost anything else. It's the easiest computer around to plug in and use, but how much do you really know about this fine communications device?

In his 624-page illustrated book (plus CD-ROM), Mac maven Ken Maki shows you how to unleash the power of your Macintosh. This book is a revision of Maki's earlier best seller, *Big Mac Secrets*, with an emphasis on the undocumented features of the Mac's System 7.5 operating platform. The combo book/CD-ROM set offers practical advice and valuable hints all Mac users should find useful.

You'll learn how to customize a Mac, and how to explore the undocumented features of System 7.5. Maki guides you through an upgrade process and offers troubleshooting help for both software and hardware. With chapters covering networking and system enhancements, the book is written in a clear and interestingly offbeat style that is quite effective.

The accompanying CD-ROM contains more than 600 MB that is compatible with System 7.5. Users can design their own icons, paint their desktop with bizarre patterns, have Elvis drop by or invite Bullwinkle to remind them to call home. The CD-ROM contains software for telecommunications plus six other functional areas.

Macintosh Revelations, by Ken Maki, is $32.95. Order it from John Wiley and Sons Inc., 605 Third Ave., New York, NY 10158-0012.

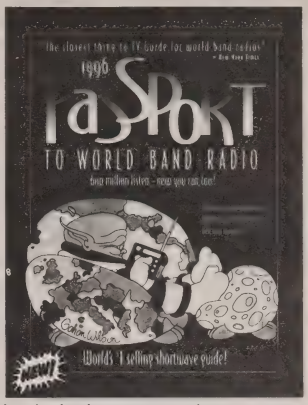
In Addition...

Updated additions of Dataworld's AM, FM and TV/LP/TX map books have been published, according to press information. These books provide information to broadcast consultants. Each book is organized into a two-page-per-channel 11-inch-by-17-inch format.

The AM books' lower pages display daytime groundwave coverage and co-channel interference. The upper pages contain Class A (clear channel) protected station skywave contours and scaled radiation patterns for all other stations.

The FM and TV books also show coverage and co-channel interference contours on the lower page. The upper page in the FM book contains an area-to-locate study for each channel for the entire nation. Users can instantly determine if new channels are available at a given location. The TV book shows LPTV and TV translator coverage and co-channel contours.

We were not advised of the prices of these books. Remember, they are prepared for use by the broadcast industry. They come from Dataworld, 4827 Rugby Ave., Suite 200, Bethesda, MD 20814. ■



Here's the latest on equipment, accessories and radios for SWL'ing. ©1995

❑ IBS-RDI96 **$19.95** plus shipping$4.50 US Mail - $7.50 Foreign

Free Catalog Packed with all kinds of books for Amateur Radio, SWL, CB and electronics professionals.

(800) 457-7373

Radio Bookstore

PO Box 209
Rindge, NH 03461-0209

603-899-6826 24 hour FAX

CIRCLE 79 ON READER SERVICE CARD

DELTACOMM™ DSS
Digital Signal Strength Option For Your ICOM™ R7000

DELTACOMM™ I-7000 and your MS-DOS computer integrated with the Delta Research custom CI-V interface and optimized software will not just control but will maximize the potential of your ICOM™ IC-R7000's monitoring capability.

- CYBERSCAN function allows scan file tracking control of systems employing frequency hopping techniques.
- Spectrum log at speeds in excess of 1300 channels a minute, generate a real time histogram of activity and create scan database file automatically.
- Birdie log during frequency search automatically characterizes your R7000, then locks out those frequencies.

- Activity log function continuously monitors and logs all frequencies of a scan database while displaying active, was active and never active channels.

Optional DELTACOMM™ DSS (Digital Signal Strength) upgrade for your DELTACOMM™ I-7000 communication manager.

- Innovative interface design allows digitizing and storing the R7000 signal level information with 8-bit accuracy via your computer's game/joy stick port.
- DSS allows user programmable upper and/or lower signal level detection limits during DELTACOMM™ I-7000's spectrum log, scan and search functions.
- Log signal strength information to printer or delimited log file while DELTACOMM™ I-7000 is scanning or activity logging the selected database file.

DELTACOMM™ I-7000 communication manager program includes all cabling, manual, UL listed power supply and Delta Research custom CI-V interface for $299.00 + $8.00 (U.S.) or $25.00 (foreign) S&H. The DELTACOMM™ DSS interface upgrade comes complete with easy to follow NO SOLDER installation instructions, all cabling and 8-bit DSS A/D converter module (game port required) for $99.00 + $8.00 (U.S.) or $25.00 (foreign) S&H and is available as an upgrade option to registered I-7000 users. Contact us for additional information on DELTACOMM™ communication managers for ICOM™ R7100, R71A, R72 and IC735.

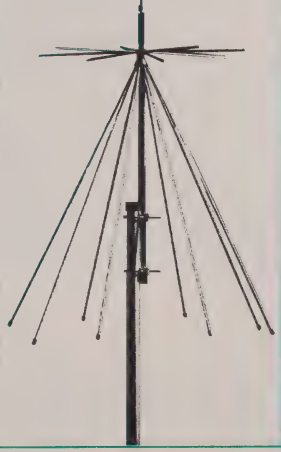
Delta Research

Box 13677 • Wauwatosa, WI 53213 • FAX/Phone (414) 353-4567

CIRCLE 59 ON READER SERVICE CARD

NEVADA

1300 DISCONE



If you've been looking for a superior wide band omnidirectional antenna covering 25-1300MHz, this is it!

The SE1300 is the ultimate wide-band omni-directional antenna for hours of listening pleasure.

EDCO

EDCO
323 Mill Street
Vienna, VA. 22180
Ph: 703 938 8105

CIRCLE 61 ON READER SERVICE CARD

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Satellite C3I

C3I is a military term that stands for four elements crucial in winning a war or maintaining a standing army: command, control, communications and intelligence. Military satellites play a greater role each year in C3I for both tactical and strategic forces. Satellites, ground stations and mobile communication terminals are central in fighting modern battles, making them high-priority targets during wartime. The Department of Defense is upgrading satellites and communications facilities to ensure survivability. Our next generation military comsat, known as Milstar, will be hardened against jamming techniques.

Our current systems consist of a UHF and SHF network of satellites. Milstar, currently under development, will use EHF. The UHF satellites come in two types: The Fleet Satellite Communications (Fltsatcom) are government owned and carry Navy and Air Force communications; the second system is Leasat, and are leased satellites. Both UHF satellite systems use 225 to 400 MHz.

Fltsatcom were built by TRW. There are five in orbit and each satellite has 10 25-kHz and five 5-kHz channels. One single 500-kHz wide channel also is carried by all Department of Defense (DOD) satellites for one-way communications from the president or national command authority. This is used for the launch of nuclear weapons.

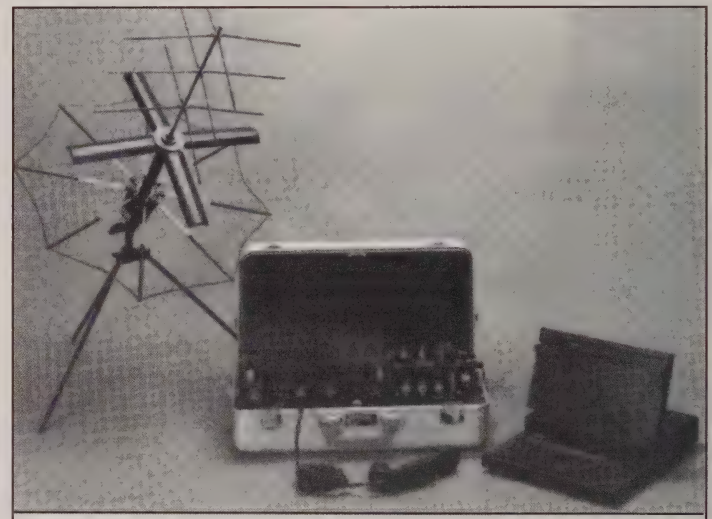
Using frequency division multiplexing (FDM) techniques, up to 21 stations can simultaneously use each satellite. The UHF system is highly mobile. Small manpack, portable and vehicular-mounted terminals are low power and easy to operate. There are eight different manpack satellite transceivers in use on the Fltsatcom and Leasat (Leasats also are known as Syncom) satellite systems. Most manpacks are single-channel radios. Larger multichannel radios are used at the permanent ground facilities and in portable communications vans.

Along with unencrypted and encrypted voice communications, the manpack radios also use a packet data mode. Current models include the URC 101, URC 12 and PSC 3 transceivers. The KY 57 encryption unit secures the packet transmissions. Single-channel transceivers can operate at speeds of up to 2,400 baud. Secure packet is the mode used most by the 82nd and 101st Airborne as well as our other rapid deployment teams. The UHF also is used by Military Intelligence, DOD, the Joint Chiefs and the National Command Authority. Flaming Arrow, a multiservice satellite network, uses the AN/MSC 64 transceivers and a low data rate packet mode.

Joint U.S. and NATO forces use an SHF

Satellite	Location	Frequency	
Fltsatcom	177°W	225-400 MHz	7/8 GHz
same	145°W	same	same
same	105°W	same	same
same	100°W	same	19/20/30/44 GHz
same	72°E	same	20/44 GHz
same	75°E	same	7/8 GHz
same	77°E	same	same
Milstar	148°W	same	2/20/45 GHz
same	120°W	same	same
same	90°W	same	20/45 GHz
same	19°W	same	2/20/45 GHz
same	30°E	same	same
same	55°E	same	same
same	90°E	same	same
same	133°E	same	same
same	150°E	same	same
same	152°E	same	same

Table 1.



Transmitter Characteristics

Power Output	FM, PM: adjustable in 2 watt steps from 2 to 18 watts AM: low watts; high 5 watts
Frequency Range	225-399.995 MHz
Channel Spacing	5 kHz and 25 kHz
Frequency Accuracy	± 1 ppm over operating temperature and for one year
Modulation	AM and FM, voice, cipher, data and beacon. 1200 BPSK, 2400 SBPSK data, nondifferential or differentially encoded data

(Courtesy of Motorola)

LSSC-700 Portable SATCOM Terminal with the LST-5E and Advanced Data Controller (ADC).

Now The Company That Takes You Around The World Lets You Take The World Around With You.

The Drake SW8 – Finally, Professional Desktop Performance In An Affordable, Portable World Band Shortwave.

The company that has been setting the standards in premium-quality world band shortwave performance now puts top-of-the-line features and technology at your fingertips with the SW8...wherever you want to take it. Designed for both desktop use and easy portability, the Drake SW8 includes many of the same features that have made Drake a perennial favorite of experts – superb audio, versatility, and the unique combination of professional quality and functional simplicity. So tune in the world and get the best of all worlds – quality and affordability, desktop technology and portability.

The Drake SW8.

To order your SW8 direct, for more information, or for the dealer nearest you call:

1-800-968-7426

DRAKE

MADE IN AMERICA

Get It Firsthand With Drake World Band.

Get a Handle on World Events...Order Your Drake SW8 Today. Now Priced under $700.00

R.L. Drake Company • P.O. Box 3006 • Miamisburg, OH 45343 • U.S.A.

©1995 The R.L. Drake Company

CIRCLE 135 ON READER SERVICE CARD

CHEEK
The Ultimate Scanner!
The King of Scanners takes this step-by-step, richly illustrated, bench manual beyond everything ever published on scanner mods. Bill is a perfectionist who will help you convert your scanner into precisely what you've always wanted!
MAY 1995
244 pgs, large format, $29.95

EMERGENCY RADIO! Norm Schrein
Scanning News As It Happens
214 pages, $14.95
"Excellent..." Barry Goldwater "A winner... 911 Magazine
"Rates a 10!" Dispatch Magazine "Irresistible" Bill Cheek

SCANNERS & Secret Frequencies Henry Eisenson
320 pages, $19.95
"Must reading." Electronics Now "Useful, knowledgeable..." PopComm
"A giant undertaking...authoritative" Monitoring Times "You can't miss!" ASG
"Absolutely the best..." Norm Schrein "A high point!" RCMA

Underground Database 100 pages, large
400 things that are sort of legal. SCARY!! format, $23.75

Television GRAY Market Henry Eisenson
Cable & satellite chips. descramblers. etc. 160 pages, $23.75
"Explores this shadowy fringe area in depth... good info." PopComm

INDEX Publishing Group, Inc. First book $4 s/h, $2 ea add'l
3368 Governor Drive, Suite 273P CA add 7.75% tax
San Diego, CA 92122 MO/check via mail.
619-281-2957 (editorial) Order line 800-546-6707

CIRCLE 69 ON READER SERVICE CARD

UNBELIEVABLE RANGE
WITH A 3 INCH ANTENNA!
Hear every whisper in a room on your programmable scanner!
Now available in UHF
Model UX-50
Check these features:
•REALISTIC 1 mile range
•Simple 5 minute assembly
•Measures only 1¾ x ¾ inches
•Runs for days on low-cost 9V battery
•Single-sided board for EASY custom mounting
Only $79.95

WHY UHF?
Most "miniature" VHF transmitters require a 3 FOOT ANTENNA for any useful range. Our UX-50 transmits farther with a 3 INCH ANTENNA!

UHF IS PRIVATE!
Many VHF transmitters use a cheap computer crystal to transmit on 143 MHZ - receivable by EVERYONE with a 2-meter amateur radio! Our UX-50 uses miniature transmitting crystals on one of 4 stocked frequencies away from public bands.

WHY SETTLE FOR VHF? Because of high cost and complexity, UHF transmitters are rare. While many companies imitate our products, it's our technology they can't duplicate. We are the first to bring you a true UHF transmitter at a VHF price!

Select your own frequency:
A: 398.600/805
B: 399.450/455
C: 399.025/030
D: 406.000
Channel selected at random if none specified

We back our product with a moneyback guarantee the "toy makers" can't match; we invite you to use our UX-50 for a month and put it to the test. Return it for a courteous refund if it doesn't perform exactly as needed. Save $$$ - buy 2 or more UX-50's for only $75 each!
Visa, M/C, MO, COD. Add $3 S&H by UPS.
The leader in wireless design since 1976
DECO Industries
914-232-3878
BOX 607
BEDFORD HILLS, NY
10507
914-243-0346 (FAX)

SATELLITE	FREQUENCY	ORBIT	USERS
		Geo-stationary	
DSCS II & III	7,250 to 7,775 Mhz downlink 7,900 to 8,400 Mhz uplink		NSC/AF/DOD
FLSATCOMM	240 to 265 Mhz downlink 290 to 318 Mhz uplink		Navy/AF/NSA
MARISAT	240 to 328 Mhz downlink 335 to 399 Mhz uplink	F1-15°W/F2-72°W F3-176°W	Navy
MARISAT	1,535 to 1,542 Mhz downlink 1,635 to 1,665 Mhz uplink	" " "	Commercial Maritime
MARISAT	4,190 to 4,200 Mhz downlink 6,410 to 6,425 Mhz uplink	" " "	Commercial maritime
SDS	200 to 400 Mhz	Molniya orbit	AF/CIA/NSA

NOTE: CIA proprietaries also lease transponders on commercial satellites.

Figure 1. Military Satellites.

satellite system known as the Defense Satellite Communications System (DSCS). These satellites operate on 7 and 8 GHz. The DCSC II and III satellites support the Defense Communications System (DCS) and the Diplomatic Telecommunications System (DTS). DTS traffic consists largely of embassy communications.

Most telecommunications operators at any U.S. embassy are CIA or National Se-

The AN/PSC-5 VHF/UHF satellite terminal. (Courtesy of Magnavox)

PASS YOUR HAM THEORY—GUARANTEED!

ARRL Videos and Software: The Fast, Easy, Fun Way To Your License

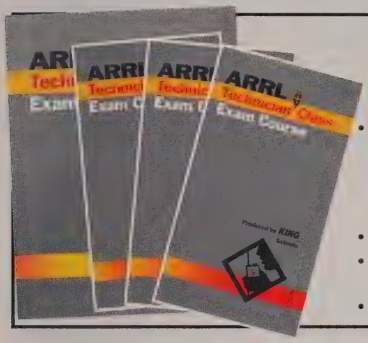
ANY ARRL VIDEO EXAM COURSE — **Only $99**

TECHNICIAN • GENERAL • ADVANCED

Save $29! *Order Your Video Exam Course And Computerized Exam Review Software And Receive BOTH For Only.....$119*

Why do things the hard way?

Sit back, relax and learn everything you need to know with our exclusive video courses!



Your Complete ARRL Home Study Video Exam Course Includes:

- Three exciting video tapes—hours of invaluable instruction covering everything you need to pass your written exams (General Class also includes Morse Academy software).
- Course Book with detailed notes.
- Every exam question, with correct answers and detailed explanations.
- Practice exams to "tune you up".

Video That Really Teaches!

Learn through the magic of 3-D animation, full-screen "monster" graphics and live-action video. You'll find even the most difficult material easy to understand—and remember. Your video course puts you in complete control, learning at your own pace. You can stop, rewind, and review any part of the course whenever you like.

You can be confident your ARRL video courses cover everything the FCC wants you to know. They are produced by King Schools, Inc., world leader in the production of exam preparation video courses, and get the job done like no other medium can.

In addition, the veteran hams here at ARRL Headquarters stand ready to answer your questions.

We Guarantee Your Success.

Here's what our graduates say:

"A fantastic job…a picture is worth a thousand words!"
— David Economos, KA1HCZ, New Hampshire

"The tapes were wonderful, especially for someone like me, who has no background in electronics!"
— Robin Krueger, N2YQE, New Jersey

"The videos were first class. And I especially like the PC-based Exam Review Software. Without it I couldn't have 'aced' the tests."
— Alberto Casanova, KE4MNF, Florida

"The only way to study."
— Jeff Aldridge, KE4OPW, North Carolina

Ensure Your "Test Success" With ARRL's Computerized Exam Review

After you've taken your video course, let your computer make it fun to ensure a top score on your exam.

The ARRL Computerized Exam Reviews are fun, user-friendly programs that let you choose questions by subject, or take them all. At your command, you'll see on-screen correct answers with ARRL's detailed explanations.

Plus…the program selects unanswered or previously missed questions, tracks your progress, and gives you a personal Report Card so you can watch your score improve!

A $49 value.
With your ARRL video course, only $20

Order Risk Free

Examine your course for 20 days. If it's not what you expected, simply return it for a full refund—no questions asked. You will pass your FCC written (and for the General, Morse Code exam) within one year, or you can return your course materials for a full refund—every penny. (Include a dated proof of purchase and the date and location of your VEC-administered exam session when you return your course.)

Call 1-800-326-3942 Or Tear Out And Mail Today

YES! Send me my ARRL course now. Rush me the package checked below.

☐ Complete Video Course and Computerized Exam Review Software, only.....$119
- ☐ Technician Class
- ☐ General Class (Includes IBM-compatible *Morse Academy*.)
- ☐ Advanced Class

Select format:
☐ DOS ☐ 3.5" ☐ 5.25"
☐ Macintosh (Tech & General Only)

☐ Complete Video Course (without exam review software)...$99
- ☐ Technician Class
- ☐ General Class (Includes IBM-compatible *Morse Academy*.)
- ☐ Advanced Class

☐ Additional Course Book (with course purchase only) $19
- ☐ Technician Class
- ☐ General Class
- ☐ Advanced Class

SHIP TO:
NAME _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____
TELEPHONE ( ) _____
CHARGE TO ☐ MASTERCARD ☐ VISA ☐ DISCOVER ☐ AMEX
CARD NO. _____ EXP. ____
☐ CHECK OR MONEY ORDER ENCLOSED

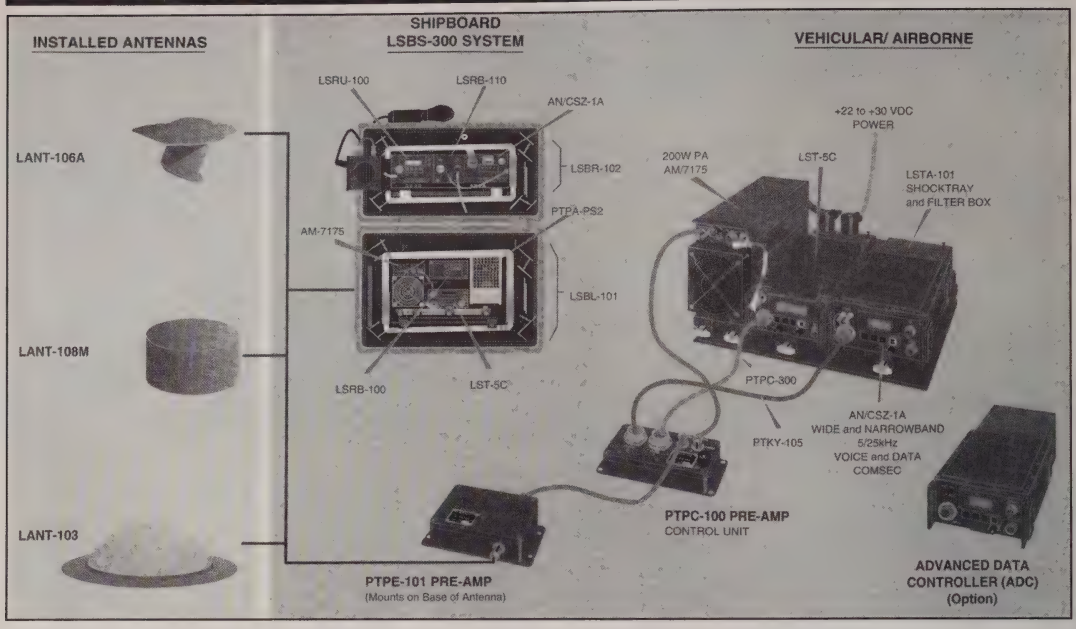
TOTAL PURCHASE $ _____
In CT add 6% tax _____
In CA add 7.25% tax _____
SUBTOTAL $ _____
SHIPPING & HANDLING _____
☐ UPS SURFACE.....$5
☐ 2 DAY AIR.....$15
TOTAL AMOUNT $ _____

DISCOVER MasterCard VISA

The American Radio Relay League
225 Main Street, Newington, CT 06111
860-594-0200 • Fax 860-594-0259
E-mail: ead@arrl.org

PC

Also available from your local Amateur Radio dealer.



SATCOM shipboard/vehicular/airborne installation. (Courtesy of Motorola)

curity Agency. It is likely that these satellites also carry traffic for both the NCA and CIA. Also note that the embassy codes that are changed daily are transmitted to all CIA stations via satellite. Most of our radio codes are generated by the NSA, although the CIA has its own small code section.

'Would-Be' Satellites

As communication satellites are among the highest priority targets in wartime, the Navy has been working in a high-altitude communications relay platform that operates similar to satellites. The platforms, which carry the same UHF/SHF transponders as a satellite, are carried aloft by a balloon. Between 70,000 feet and low-earth orbit there is very little atmosphere, therefore, the balloons are very stable. They can be launched from ships for special operations or deployed in groups to provide theaterwide or worldwide communications coverage. At 70,000 feet, a single balloon can provide coverage up to 500 miles using HTs (handi-talkies). The Navy also is interested in the 120,000-foot range that could provide wider coverage. Using two dozen of these low-cost (when compared to satellites) platforms, worldwide coverage can be provided.

Platforms are able to stay aloft for up to a year. They are also difficult to spot visually and by radar. At altitudes of 70,000 or 120,000 feet, they are even more difficult to target. High survivability and low unit cost make this program—called Zepher—an attractive one.

Magnavox Electronic Systems is marketing a portable and truck-mounted satellite terminal to use with the Milstar (EHF) satellites. Experimental EHF transponders have been placed in five Fltsatcom spacecraft that already are in orbit.

Magnavox also has developed a nonmilitary version of a mobile communications van for business and emergency services. This system is designed to provide worldwide telephone, telex, fax and data communications from moving vehicles. Calls are routed through satellites and earth stations operated by the international INMARSAT network. Telephone calls are directly dialed from the truck using short-range UHF radio links. The truck contains a stabilized satellite dish covered with an unmarked fiberglass cover. The vehicle is fitted with a satellite navigation receiver that calculates its geographical position using signals from GPS navigation satellites.

FELIZ CUMPLEAÑOS WRTH

Viele Wünsche Zum Geburstag WRTH

Bon Anniversaire WRTH

HAPPY BIRTHDAY WRTH

For 50 years, in every country, the World Radio TV Handbook has been the leading directory of radio, TV and satellite broadcasters.

WRTH 50TH ANNIVERSARY

CIRCLE 89 ON READER SERVICE CARD

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 31, DALTON, MA

POSTAGE WILL BE PAID BY ADDRESSEE

POPULAR COMMUNICATIONS

Reader Service Dept.
P.O. Box 5115
Pittsfield, MA 01203-9935

LOOK

AND SEE WHY

U.S. SCANNER NEWS

Is the *ONLY* national monthly magazine devoted entirely to the hobby of VHF-UHF monitoring. *NO* Shortwave Broadcast!!

Each Month You Get:

AVERAGE 50+ PAGES PER MONTH

- ➤FCC Monthly Updates For ALL States
- ➤Outstanding Feature Articles
- ➤In-depth, unbiased reviews
- ➤Accurate frequency information
- ➤The latest FCC actions
- ➤Helpful scanning and technical hints
- ➤Plus regular monthly columns

REGULAR MAGAZINE FORMAT

1-800-890-6999

Call Now With Your Credit Card Or Send a Check or Money Order To:

U.S. Scanner Publications
PO Box 14923
Portland, OR 97214-4923

VISA MasterCard

- ❑ One Year for only $20.00. (Other Countries $34.00 US funds)
- ❑ Two Years for only $35.00. (Other Countries $64.00 US funds)
- ❑ Three Years for only $49.00. (Other Countries $92.00 US funds)
- ❑ Sample Copy $3.00 1ST Class. (Other Countries $5.00 US funds)

Name _____

Address _____

City, State, Zip _____

MC/Visa/Discover # _____ Expires _____

CIRCLE 27 ON READER SERVICE CARD

POP'COMM Reviews:

The HOKA Code-3 HF Data Comm Decoder

Have you ever wondered what all those strange-sounding signals are on the shortwave bands? Chances are very good that you are hearing some form of digital radio data communications signals. Typical signals include radio teletype (RTTY), Morse code (CW), facsimile (fax), Simplex Teleprinting Over Radio (SITOR), and many others. Another world of listening enjoyment awaits you when you "tune in" to the digital communications modes used on shortwave. The HOKA Code-3 software-based decoder allows you to copy these intriguing signals.

What is it?

Manufactured in the Netherlands, the HOKA Code-3 is a software-based system that utilizes your PC for decoding signals received by your shortwave receiver. An external FSK converter (115-volt AC power supply and serial cables included) that interfaces the receiver to your computer's RS-232C serial port, the HOKA Code-3 system software program and a well-written instruction manual comprise the entire package. Because the Code-3 package is software-driven, upgrades are a simple matter of loading the new software when available from the manufacturer. The package for this review was supplied with version 5.0 of the system software.

Operation

After you successfully complete the installation of the HOKA Code-3 system, you are ready to embark on a new course of shortwave listening fun! Don't let the simple appearance of this product fool you; the "standard" system packs a sophisticated decoding capability of 26 modes. All commands to the Code-3 are through the use of "command keys" on the keyboard of the PC. For example, the "B" command selects the data rate or baud rate. The screen overlay on the computer's monitor supplies all information required to determine the status of the system as well as user-selected parameters.

Once you have tuned your receiver to a signal, the HOKA Code-3 offers three methods to decode the signal. The first and most time-intensive method requires you to manually step through each "module" or code type and data rate until the system begins to decode the signal. This method is easy to accomplish, but most often takes considerable time to implement. The second and easiest method is to allow the Code-3 to do all the work for you! Through its "auto classification" module, the Code-3 will search all modes until it finds the correct code type and data rate for proper decoding. And the third, the so-called "expert" method, requires you to analyze the code type's parameters and data rate for the proper selection of the correct module. This method takes some serious time to master! After trying all methods, the simplest and "no-brainer" choice is to use the Code-3's "auto classification" feature. It works well and does not take long to "lock up" on the correct code and data rate.

As previously mentioned, the "standard" Code-3 package decodes 26 digital communications modes. A sampling of these include: Morse code, RTTY, SITOR, Navtex, AX.25 packet, facsimile, ASCII, WEFAX, Twinplex and Pactor. Needless to say, the modes offered by the "standard" Code-3 package are too numerous to mention, but are required for the serious digital communications listener. One rather unique module included within the package is the simulated speed measurement module. It graphically displays code type, data rate and shift of the received signal as well as displaying the signal's sidebands!

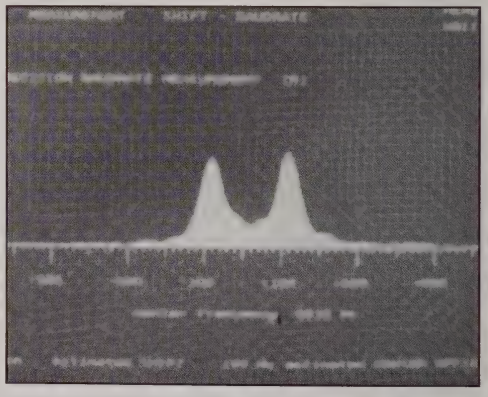
Summary

Although it takes some time to become familiar with the digital modes of communications on the shortwave bands, the HOKA Code-3 decoder system makes this transition relatively simple and painless! Once up and running, the Code-3 package worked as specified and provided many hours of listening enjoyment. Only one complaint regarding the Code-3 system: The enclosed system software carries an archaic copy-protection scheme. It allows only one installed copy of the Code-3 software on your computer.

The "standard" package covers most digital modes used on the shortwave bands. HOKA also offers four extra-cost options to decode other signals such as Piccolo, Coquelet, TORG-10/11 and SYNOP. Versatility and ease of use are the Code-3's strengths. Current price of the "standard" HOKA Code-3 package is $595. All four extra-cost options are available for $199.95.

For more information on the Code-3, contact Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71138; call (318) 687-2555; or e-mail to j.springer7@genie.com. ■

Reviewed by POP'COMM *staff*



HOW I GOT STARTED

Popular Communications invites readers to write in about 150 words how they got started in the communications hobby. They preferably should be typewritten, or otherwise easily readable. If possible, your photo should be included.

Each month we will select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate is especially interesting, unusual, or even humorous. We reserve the right to edit all material for length and grammar, and to improve style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*.

Address all entries to: How I Got Started, *Popular Communications*, 76 N. Broadway, Hicksville, NY 11801, or e-mail to POPCOMM@aol.com.

Our December Issue

This month, our winner is 16-year-old Cameron Sowder of Selah, Wash. Though he is young, he already has found his niche in the hobby:

"I got started about four years ago when a ham moved in across the street. One day while I was visiting him, I overheard someone in Moses Lake talking over his radio. I thought to myself, 'Wow! Moses Lake is 70 miles from here!'

"From that day, his shack became my second home. Almost everything I know about radio was learned in that shack from my neighbor.

Cameron Sowder sitting with a few of the radios that round out his listening shack.

"My first receiver was an old Soundesign multiband that I purchased at a garage sale for $5. Today my listening equipment consists of a Realistic DX-390 for HF, a Bearcat148XLT, a Realistic Pro-41 for VHF/ UHF, a Rhapsody multiband and an old solid-state mulitband. I also have two CBs that are rarely used. I am hoping for at least two more radios for Christmas.

"I am a Registered Monitor, KWA7DV, and my primary listening interests on HF is DXing utility stations. With my equipment to keep me busy, I look forward to many more DXing memories in the future!" ■

UNLOCK
FULL 800 MHz
$40
NEW!!
Full 800MHz Coverage
Virtual Downconverter
$99.00
BC-220,860,900,3000,8500
PRO-23,26,29,51,2035
CLASSIC SCANNERS
PRO 34,37,39,43,46,2004,5,6
2022,26,27,30,32
BC 200,205,2500,700,760
855,890,950
FREE
CELLULAR
FREQUENCY
CHARTS
Over 1500 Satisfied Customers
Same Day Service...
FREE Insured
UPS Return
FOR DETAILS CALL:
508-281-8892
SHIP TO:
Cellular Security Group
47 Causeway Street
Gloucester, MA 01930
ONLY the "classic scanners" listed above can be unlocked and some are restricted by the date of manufacture.
Note: Certain modifications may be in violation of F.C.C. rules and regulations. Cellular Security Group assumes no further responsibilities beyond those stated in this ad.

FINALLY - NOW AVAILABLE IN THE USA
The Decoder that is the STANDARD of the European Continent.
HOKA CODE-3 USA Version
Many radio amateurs and SWLs are puzzled! Just what are all those strange signals you can hear but not identify on the Short Wave Bands? A few of them such as CW, RTTY, Packet and Amtor you'll know - but what about the many other signals?
There are some well known CW/RTTY Decoders but then there is CODE-3. It's up to you to make the choice, but it will be easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you're listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the modes listed below - and most more expensive decoders have no means of identifying ANY received signals! Why spend more money for other decoders with FEWER features? CODE-3 works on any IBM-compatible computer with MS-DOS with at least 640kb of RAM, and a CGA monitor. CODE-3 includes software, a complete audio to digital FSK converter with built-in 115V ac power supply, and a RS-232 cable, ready to use.
CODE-3 is the most sophisticated decoder available for ANY amount of money, and the best news of all, is that it is available from a United States dealer.
Simulated Speed Measurement Module
26 Modes included in standard package include:
• Morse • RTTY/Baudot/Murray • Sitor CCIR 625/476-4 ARQ - Navtex • AX25 Packet • Facsimile all RPM (up to 16 gray shades at 1024 x 768 pixels • Autospec - Mk's I and II • DUP-ARQ Artrac • Twinplex • ASCII
• ARQ6-90/98 • SI-ARQ/ARQ-S • SWED-ARQ-ARQ-SWE • ARQ-E/ARQ1000 Duplex • ARQ-N-ARQ1000 Duplex Variant • ARQ-E3-CCIR519 Variant • POL-ARQ 100 Baud Duplex ARQ • TDM242/ARQ-M2/4-242 • TDM342/ARQ-M2/4
• FEC-A FEC100A/FEC101 • FEC-S + FEC1000 Simplex • Sports info 300 baud ASCII • Helscreiber-Synch/Asynch • Sitor + RAW (Normal Sitor but without Synch. • ARQ6-70 • Baudot F788N • Pactor • WEFAX
Available as extra options
Option 3 Piccolo $85.00
Option 4 Coquelet.....$85.00
Option 5 4 special ARQ & FEC systems TORG-10/11, ROU-FEC/ RUM-FEC. HC-ARQ (ICRC) and HNG-FEC.....$115.00
Option 8 SYNOP decoder..$85.00
• All modes in typical baud rates with possibility of changing to any desired value of speed and shift.
• All options are available from the main menu, saving or loading to and from hard/floppy drive in bit form, means no loss of unknown signals!
• HURRY! For a limited time the Standard CODE-3 package includes FOUR options:
1. OSCILLOSCOPE 2. ASCII STORAGE 6. AUTO CLASSIFY 7. PACTOR
Live Support after the sale. Computer Aided Technologies is dedicated to customer support!
STANDARD CODE-3 PACKAGE $595.00 ALL FOUR EXTRA OPTIONS - $199.95
NOW AVAILABLE — CODE-30 DSP-Based Decoder with all above options. $CALL (318) 687-2555
(SHIPPING & HANDLING $10.00) DEMO (SLIDE) DISK ONLY $5.00 DEALER INQUIRIES INVITED
INTERNET WEB ADDRESS - http://www.bcrr.secret.com/scancat.html
WEB E-MAIL - scancat@bcrr.secret.com
Christmas Special! Buy HOKA before Dec. 31 and receive two FREE programs to capture and print graphics files.
COMPUTER AIDED TECHNOLOGIES
P.O. BOX 18285 - SHREVEPORT, LA 71138
ORDERS ONLY - (318) 636-1234 FAX (318) 686-0443 (24 Hrs)
Live Tech Support (318) 687-2555 - (9 a.m. to 1 p.m. Central M-F)
Nitetime BBS (SCANCAT File Area) (318) 631-3082 (7 p.m. - 6 a.m. Central)

BROADCAST DXING

BY TIM KRIDEL

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Is It Money That Matters? A Springfield, Mo., station is under scrutiny by the federal government, but, surprisingly, the Federal Communications Commission isn't the source of the investigation. An investigator from the Wage and Hour Division of the U.S. Department of Labor visited KTOZ-AM in May, demanding records pertaining to the staff, the majority of whom are unpaid volunteers. General manager Ron Johnson refused the request. Both the investigator and the Kansas City office of the department wouldn't give a reason why the records were being sought, Johnson said, but he believes it centers around different interpretations of laws regulating volunteer work.

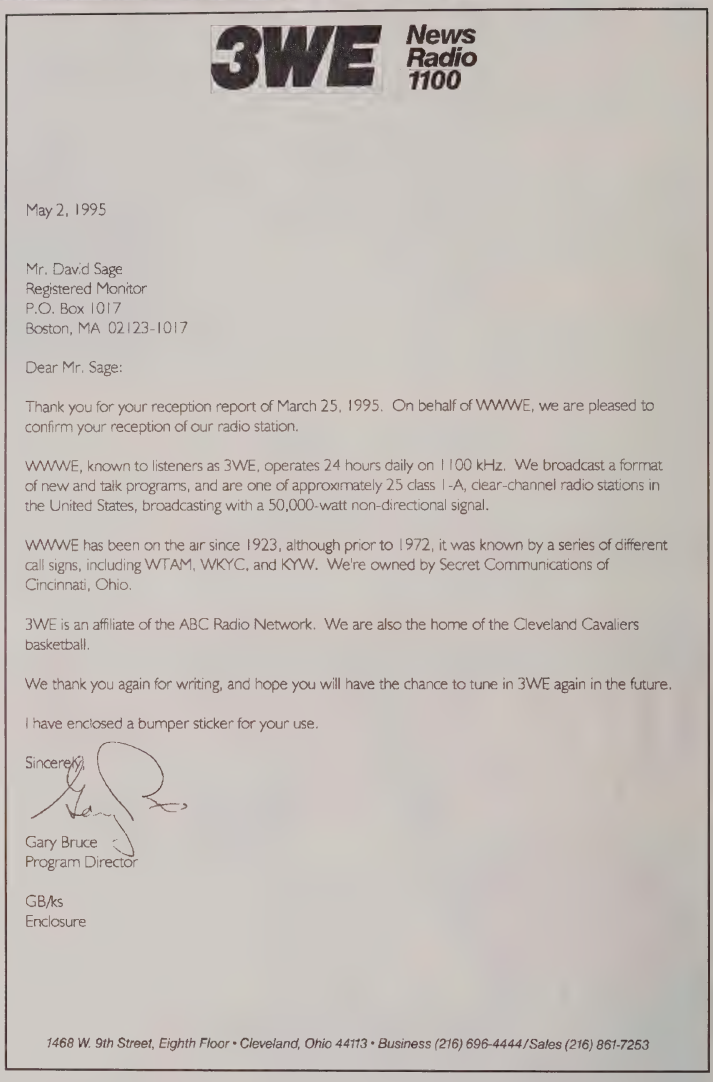
The 500-watt station was rescued from bankruptcy in June 1994 by The Entertainment Network, a group of "17 or 18 frustrated DJs," and soon others interested in learning the ropes volunteered. The shareholders' plan, Johnson said in a telephone interview, was first to raise enough money to meet the overhead, and then pay staffers a minimum wage. Only after they could pay minimum wage for six months would the stockholders receive a dividend, he said.

Although at presstime a subpoena hadn't been issued, nor any other legal action taken, Johnson says he would press the case all the way to the U.S. Supreme Court, if necessary. His goal, he said, is either to get the law changed or set a precedent. He objects to what he describes as the "storm-trooper tactics" of the federal investigation, and wonders why KTOZ is being singled out when volunteer work and unpaid internships are often the first step in a broadcasting career. Johnson also points out that the station has thrived under The Entertainment Network, having gone from "No. 26 to No. 12 or 13" in the market. The format, an eclectic mix of everything from big band to Dixieland "works," he said, adding that he's especially pleased by how many younger listeners are tuning in. KTOZ-AM's address is 2607 W. Bennett, Springfield, MO 65807.

Rules and Exceptions to Rules: A combination of stations in a market under a single owner won't necessarily result in "undue concentration of ownership or control," nor will it "unduly affect competition and diversity," the FCC ruled in several recent cases. The commission's Mass Media Bureau approved the assignment of the license of WWNK-FM to the licensee of fellow Cincinnati broadcasters WKRQ-FM and WKRC-TV, and gave the green light to the acquisition of KFTH-FM in Marion, Ark., by the owner of Memphis, Tenn., area stations WNWZ-AM, WHBQ-AM and WFBI-TV.

As explained in the July issue, FCC rules restrict the common ownership of radio and television stations in a single market, in order to promote multiplicity, competition and diversity by avoiding undue concentrations of ownership. To meet the standards for a waiver of the "one-to-a-market" rule, a proposed combination involving stations in a top-25 market must leave at least 30 separately owned, operated and controlled licenses. In the cases of WWNK and KFTH, the FCC was satisfied that the combinations would still leave the two markets with enough alternative broadcast "voices," as well as result in "significant cost savings."

But the FCC denied applications by Atlanta-based WSB Inc. to acquire WJZF-FM in La Grange, Ga., and to change the station's antenna pattern from non-directional to directional. WSB Inc. made the request in an effort to reduce WJZF's signal



3WE News Radio 1100

May 2, 1995

Mr. David Sage
Registered Monitor
P.O. Box 1017
Boston, MA 02123-1017

Dear Mr. Sage:

Thank you for your reception report of March 25, 1995. On behalf of WWWE, we are pleased to confirm your reception of our radio station.

WWWE, known to listeners as 3WE, operates 24 hours daily on 1100 kHz. We broadcast a format of new and talk programs, and are one of approximately 25 class I-A, clear-channel radio stations in the United States, broadcasting with a 50,000-watt non-directional signal.

WWWE has been on the air since 1923, although prior to 1972, it was known by a series of different call signs, including WTAM, WKYC, and KYW. We're owned by Secret Communications of Cincinnati, Ohio.

3WE is an affiliate of the ABC Radio Network. We are also the home of the Cleveland Cavaliers basketball.

We thank you again for writing, and hope you will have the chance to tune in 3WE again in the future.

I have enclosed a bumper sticker for your use.

Sincerely,

Gary Bruce
Program Director

GB/ks
Enclosure

1468 W. 9th Street, Eighth Floor • Cleveland, Ohio 44113 • Business (216) 696-4444/Sales (216) 861-7253

Long before it had the rock 'n' roll hall of fame, Cleveland was home to WWWE. David Sage heard them 657 miles away in Boston—proof that "The Monster by the Lake" is alive and well.

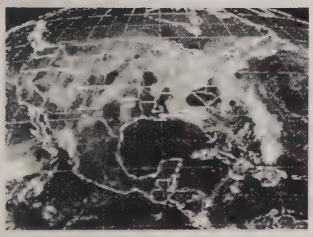
coverage of Atlanta because its parent company, Cox Enterprises Inc., already owns WSB-AM/FM/TV and the two dominant newspapers in the city. WSB Inc. hoped that by limiting WJZF's role in the Atlanta market, the standards for a waiver of the one-to-a-market rule could be met and the acquisition would be approved. The FCC eventually denied both petitions, primarily because approval would "greatly encourage circumvention of the multiple ownership rules by use of facilities modifications that reduce service to presently-served [*sic*] populations and decrease efficient use of the spectrum by encouraging licensees to operate with less-than-maximum facilities."

You Can't Keep a Good Station Down: Neither fire nor water nor vandals could keep two radio stations from serving their respective communities. Five months to the day after an accidental blaze destroyed the transmitter of WTIM-AM in Taylorville, Ill., the 1-kW station returned to the air with full power, reports *Radio World*. "News/talk 1410" was back on within 76 hours of the Jan. 24 fire, thanks to the pluck of its staff, but with only 250 watts from a leased transmitter. Achieving full power was a difficult process, compounded by heavy rains, which reduced the area around the transmitter building to a bog. After two attempts to move the equipment to the permanent site resulted only in a Bobcat and a Caterpillar mired in mud, several truckloads of rock and gravel were brought in to build a short road to the transmitter building—only to be partly submerged after more flooding. Not until June 22 were station personnel able to install the equipment, which returned WTIM to the air with full power on June 24.

This was the scene just outside of Flint, Mich., after a vandal toppled WCRZ-FM's ower. Also affected were sister station WWBN-FM and PowerFone, a cellular phone company that co-owned the tower. (Courtesy Clayton D. Hewitt, KF8UI, Flint, Mich.)

Meanwhile, WCRZ-FM in Burton, Mich., was knocked off the air May 14 after vandals cut two guy wires to the station's 370-foot tower, sending it crashing to the ground. A teen-ager was charged with de-

Get A New Image

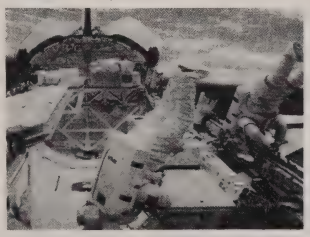


PC HF Fax Plus $129

PC HF Fax Plus is a simple, yet comprehensive HF system that receives Fax, RTTY, CW, and AMTOR on an IBM PC or compatible. It includes an FSK demodulator, advanced signal processing software, tutorial audio cassette, and complete reference manual. Just plug the demodulator into a serial port, install the software and get text and vivid images on your PC.

PC SSTV $149.95

PC Slow Scan Television is a complete system for sending and receiving full color amateur SSTV. The package includes an SSTV FSK modem, SSTV software, image capture utilities and reference manual. All popular formats are supported including Robot, Scottie, Martin and AVT. The system requires a 286, 386 or faster PC with VGA or super VGA display.



Have It All For Only $199.95

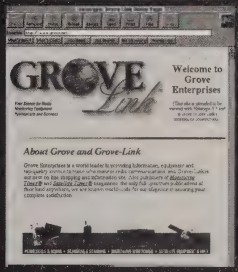
For a limited time we are offering both software packages with a single FSK modem for under $200. This combination offer will let you send and receive the popular HF image and text transmission modes.

Call or write for our free catalog. Visa and Mastercard welcomed.

Software Systems Consulting
615 S. El Camino Real, San Clemente, CA 92672
Tel.(714) 498-5784 Fax.(714) 498-0568

CIRCLE 84 ON READER SERVICE CARD

We've Always Been Friendly...



Now at Grove We're Also User Friendly

Grove Enterprises is your source for radio and satellite monitoring products and publications. If you like communications, check out our new site on the World Wide Web. GroveLink™ is ***not just an e-mail address!*** Set your browser to **www.grove.net** for information about:

- *Monitoring Times* magazine
- *Satellite Times* magazine
- Daily specials from the Grove Catalog
- Events like the Grove Communications Expo

Grove Enterprises, Inc.
300 S. Hwy. 64 W., Brasstown, N.C. 28902
www.grove.net
If you are not yet online, call 1-800-438-8155 for a free catalog

CIRCLE 67 ON READER SERVICE CARD

Seeking Permits to Construct New FM Stations

AK	Tok	91.9 MHz	200 watts
AL	Chatom	106.1 MHz	18.6 kW
AR	Blytheville	91.5 MHz	1 kW
AR	Danville	105.5 MHz	17.6 kW
CA	Ludlow	100.1 MHz	25 kW
CA	Redding	91.1 MHz	
HI	Umikoa (KLUA booster)	93.9 MHz	40 watts
IA	Perry	91.7 MHz	30 kW
IL	E. St. Louis	101.1 MHz	44 kW
IL	Knoxville	105.3 MHz	
IN	Loogootee	89.9 MHz	1 kW
KS	Larned	106.9 MHz	100 kW
KY	Whitley City	88.3 MHz	100 kW
ME	Van Buren	98.1 MHz	2 kW
MN	Buhl	92.5 MHz	50 kW
MN	Pequot Lakes	100.1 MHz	6 kW
MN	Red Lake Reservation	94.1 MHz	100 kW
MO	Festis	89.3 MHz	550 watts
MO	Marshfield	91.9 MHz	3 kW
MO	Portageville	91.5 MHz	1 kW
MT	Billings	105.5 MHz	
MT	Hamilton	98.1 MHz	
NE	McCook	93.9 MHz	50 kW
NM	Jal	107.1 MHz	100 kW
NM	Las Cruces	88.9 MHz	500 watts
NY	Saratoga Springs	89.7 MHz	
OH	Steubenville	88.9 MHz	650 watts
OH	Bryan	90.9 MHz	750 watts
OK	Norman	89.3 MHz	4.5 kW
PA	State College	90.7 MHz	100 watts
SD	Dell Rapids	95.7 MHz	
SD	Rapid City	106.3 MHz	
TN	Fayetteville	88.3 MHz	2.5 kW
TX	Dimmitt	100.5 MHz	
TX	Edna	96.1 MHz	12.8 kW
TX	Stanton	105.9 MHz	37 kW
VA	Alberta	103.1 MHz	100 kW
VA	Lynchburg	91.7 MHz	2.2 kW
WA	Elma	102.1	6 kW

Seeking FM Frequency Changes

KRNL-FM	Mount Vernon, IA	89.7 MHz	(Sought frequency not reported.)
WDUV	Bradenton, FL	103.3 MHz	Seeks 103.5 MHz, 99 kW.

Granted Permits to Construct New FM Stations

AL	Brantley	100.3 MHz	6 kW
CA	Concord (KBGG booster)	98.1 MHz	186 watts
CA	Sebastopol	93.7 MHz	530 watts
HI	Hanalei (KQNG booster)	93.5 MHz	46 watts
FL	Holly Hill	88.1 MHz	2 kW
IN	Upland	89.7 MHz	
MO	Neosho	99.7 MHz	4.2 kW
MT	Sidney	95.1 MHz	100 kW
NH	New London	90.9 MHz	
TX	Plainview	106.9 MHz	31.5 kW
TX	San Angelo	90.1 MHz	5 kW

Stations Canceled; Call Letters Deleted

KAEI	Wishek, ND	92.3 MHz	100 kW
KAVA	Rosamond, CA	890 kHz	1kW/500 watts
KBHG	Fayetteville, AR	89.3 MHz	5 kW
KIPP	Mesquite, NV	97.5 MHz	100 kW
KOAX	Mason, TX	97.7 MHz	50 kW
KRNQ	Hampton, IA	98.9 MHz	6 kW
KXKW	Tioga, LA	680 kHz	800/400 watts
WPHR	Ashtabula, OH	98.3 MHz	2 kW

Canceled Changes to AM Facilities, Previously Approved

KAAB	Batesville, AR	1130 kHz	(To add 20 watts nights.)
KCLL	Santa Maria, CA	960 kHz	(Synch. with station KNEZ.)
KFFA	Helena, AR	1360 kHz	(To reduce night power to 90 watts.)
KLTT	Brighton, CO	800 kHz	(To operate with 2.5 kW/ 200 watts.)
KQWC	Webster City, IA	1570 kHz	(To reduce power to 147 watts.)
WEHH	Elmira Heights, NY	1590 kHz	(To add 460 watts nights.)
WEOK	Poughkeepsie, NY	1390 kHz	(To add 4.1 kW nights.)
WHJM	Knoxville, TN	1180 kHz	(To add low-power night service.)
WMQA	Minocqa, WI	1570 kHz	(To reduce nights to 250 watts.)
WQBS	San Juan, PR	870 kHz	(To increase power to 10 kW.)
WRHC	Coral Gables, FL	1550 kHz	(Move to 1560 kHz; 50/4.4 kW.)
WRYT	Edwardsville, IL	1080 kHz	(To add 337 watts nights.)
WTRN	Tyrone, PA	1340 kHz	(Synch. 250-watt transmitter at Altoona.)
WWBC	Rockledge, FL	1510 kHz	(to operate with 5 kW/500 watts)

stroying the 4-month-old tower, according to reports in *Radio World* and from *POP'COMM* reader Clayton D. Hewitt, KF8UI, of Flint, Mich. By May 25, "Cars 108" was back on the air from a new tower constructed in less than a week, in spite of rain and strong winds. John Risher, WCRZ's vice president and general manager, told *Radio World* that replacing the tower would cost $150,000, and being off the air for 11 days could cost the No. 1-rated station ad revenue in the six figures.

The incident wasn't the first act of vandalism against WCRZ. Six months earlier, someone smashed all the lights on the tower, a case that remains unsolved.

Seeking the Middle Ground: While WCRZ was able to erect its tower in a matter of days, a New York City station has spent more than a year trying to build its tower—and it's still not complete. The issue of where in the Bronx to put a 480-foot antenna tower remains unresolved after it became the subject of legal action in June 1994, and no one seems to have a reasonable solution. As we reported in December 1994, Fordham University, licensee of WFUV-FM, and the New York Botanical Garden were at odds over the school's construction of the antenna tower directly across from the Enid A. Haupt Conserva-

WGAN-AM has been a fixture in Portland, Maine, since 1938. In 1961, the station used "funny money" as a promotional item. (Courtesy Bill Gove, Newcastle, Maine)

Pending FM Call Letter Changes

Old	New	
KJET-FM	KGHO	Hoquiam, WA
KRVD-FM	KYBC	Cottonwood, AZ
WCAZ-FM	WZBN	Carthage, IL

New FM Call Letters Issued

KAMK	Forest City, IA
KEIA	Sausalito, CA
KHDY	Plainview, TX
KUTX	San Angelo, TX
WANH	Snow Hill, NC
WANJ	Charlottesville, VA
WJTI	Bethany Beach, DE
WLMQ	Monterey, TN
WTPX	Jupiter, FL
WVMN	New Castle, DE

New AM Call Letters Issued

KRAO	Colfax, WA

Pending AM Call Letter Changes

Old	New	
KVRD	KYBC	Cottonwood, AZ
WBBI	WUMP	Madison, AL

Changed AM Call Letters

New	Was	
KDLK	KLXE	Del Rio, TX
KMJI	KIMN	Sacramento, CA
KNNZ	KOJY	Costa Mesa, CA
KROY	KCIN	Victorville, CA
WDSK	WKZB	Cleveland, MS
WHKW	WRES	Louisville, KY
WIIN	WLRM	Ridgeland, MS
WKCE	WCGM	Maryville, TN
WLXX	WOPA	Chicago, IL
WNWR	WPGR	Philadelphia, PA
WRBZ	WYLT	Raleigh, NC

Changed FM Call Letters

New	Was	
KAGL	KISQ	El Dorado, AR
KAXT	KXDC	Hollister, CA
KCKK	KCYT	Granbury, TX
KDLK-FM	KDLK	Del Rio, TX
KFXR	KAKK	Chinle, AZ
KHCK	KDZR	Denton, TX
KIMN	KIMN-FM	Denver, CO
KLVG	KWEO	Garberville, CA
KLZX-FM	KSOS-FM	Brigham City, UT
KMXZ-FM	KKLD	Tucson, AZ
KOLW	KAKA	Kennett, MO
KRAO-FM	KRAO	Colfax, WA
KRKH	KXYQ-FM	Salem, OR
KSMX	KPWX	Clovis, NM
KSOK-FM	KWKS	Winfield, KS
KTTG	KOUA	Mena, AR
KXDC	KAXT	Carmel, CA
KYSG	KRSR-FM	Coos Bay, OR
WASE	WLVK	Radcliff, KY
WBT-FM	WBZK-FM	Chester, SC
WCQQ	WVNM	Cedar Key, FL
WEDG	WUFX	Buffalo, NY
WFCM	WAKN	Murfreesboro, TN
WFMI	WLJU	Brookfield, WI
WHIR-FM	WMGE	Danville, KY
WHKW-FM	WHKW	Corydon, IN
WHTA	WQUL	Fayetteville, GA
WHTS	WPXR-FM	Rock Island, IL
WHVE	WQEG	Russell Springs, KY
WJDF	WFUB	Orange, MA
WJKK	WIIN	Vicksburg, MS
WKNB	WOVU	Clarendon, PA
WLVK	WASE-FM	Fort Knox, KY
WOMG	WOMG-FM	Columbia, SC
WPLA	WAIA	Callahan, FL
WREB	WJNZ	Greencastle, IN
WRED	WHYR	Saco, ME
WSJT	WEZY-FM	Lakeland, FL
WTDK	WWPL	Federalsburg, MD
WUIS	WSSU	Springfield, IL
WVRB	WVYI	Wilmore, KY
WWRQ-FM	WWRQ	Valdosta, GA
WWSN	WBT-FM	Charlotte, NC
WYOK	WZBA	Moss Point, MS

tory, which garden officials claim would detract from their "magnificent backdrop of unimpeded skyline."

Now, according to a *Daily News* article sent to us by Victor Acosta, N2UNV, of the Bronx, the city's Board of Standards and Appeals ruled in June that the school either must limit the tower to a maximum of 380 feet, or move it 25 feet to comply with zoning laws. Neither side is happy with the ruling. Fordham officials told the paper that the station needs a 480-foot tower to serve the community and thus meet the requirements of its license, and that relocating the half-complete tower would increase the $1.1 million cost by another $200,000 to $300,000. Meanwhile, the garden said that moving the antenna only 25 feet would be "gratuitous," and still would blemish the garden. Although neither side has won this round, negotiations are ongoing.

Trade Ya: Regular listeners of two southern Alaska AMers will need to retune their radios—but only slightly. Long Island's KABN and Sand Point's KSDP were granted permission by the FCC in July to swap frequencies, provided that the switches be made simultaneously. KABN will move to 840 kHz from 830 kHz, while KSDP will change to 830 kHz from 840 kHz.

The FCC based its decision on the assessment that allowing KABN to move to 840 kHz would "improve the secondary skywave service of both KABN and first adjacent channel KCBF" on 820 kHz, "and is thus consistent with the commission's goal to alleviate interference in the AM band." The FCC news release notes that although KABN has been off the air "due to conductivity problems that have affected the operation of its transmission system," the station's application to change its transmitter site is a separate case and is pending.

Public Radio: Imagine a station where you can hear everything from a blow-by-blow account of a bear hunt to Mozart to the musings of a local merchant—and just

It's time you found out...
What over 185,000 people already know.

NOW YOU'RE TALKING!

was written with you, the reader, in mind.

There's never been a more exciting time to get your Ham license. You can use Amateur Radio as a fun, friendly method of local communication, an invaluable tool in emergencies, or even experience the thrill of talking to Astronauts and Cosmonauts in orbit.

Whether you want to enter Amateur Radio as a Technician and choose to skip the code, or as a Novice licensee, *Now You're Talking* will provide you with the information you need in bite-size, easy-to-understand diagrams, photos and sketches, you'll be familiar with all the questions used to make up the FCC test...and you'll be ready for it.

In addition to study material that won't let you down, you'll find invaluable operating hints and tips you'll use once you pass your test. *Now You're Talking: All You Need to Get Your First Ham License* is the book you'll use even after you've passed your exam.

You can shop around for bargains, or you can join the thousands of licensed amateurs who have used *Now You're Talking* to pass their exam. Order your copy today:

Enclosed is $19 plus $4 for shipping (a total of $23) or charge $23 to my
( ) VISA ( ) Mastercard
( ) Discover ( ) American Express

For more Information Call 1-800-326-3942

Signature _____

Acct. No. _____

Expiration Date _____

Name _____

Address _____

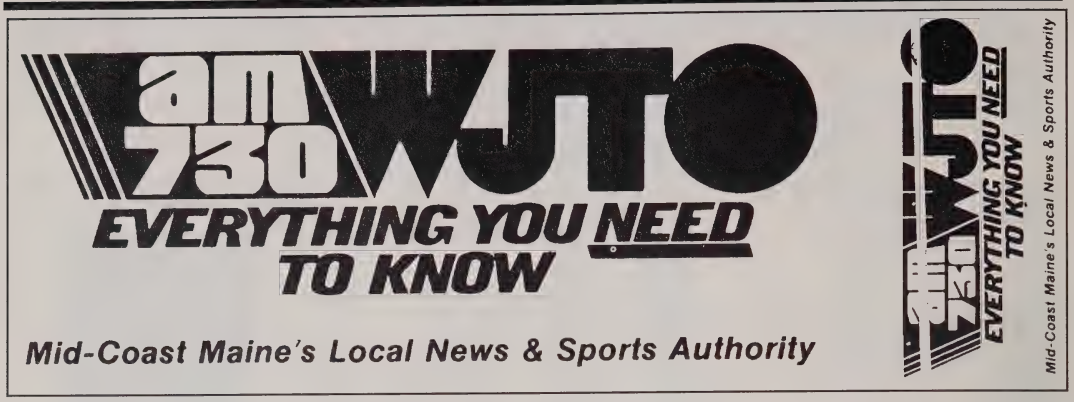
_____

City State Zip

PC

THE AMERICAN RADIO RELAY LEAGUE
225 MAIN STREET
NEWINGTON, CT 06111

CIRCLE 39 ON READER SERVICE CARD


am 730 WJTO
EVERYTHING YOU NEED TO KNOW
Mid-Coast Maine's Local News & Sports Authority
am 730 WJTO
EVERYTHING YOU NEED TO KNOW
Mid-Coast Maine's Local News & Sports Authority

Bath, Maine's WJTO-AM issued this bumper sticker back in 1985. The station now plays the "Music of Your Life." (Courtesy of Bill Gove, Newcastle, Maine)

about everything in between. The station is WXPR-FM, a publicly funded, 100-kW station in Rhinelander, Wis. "If ever there was a community radio station, this is it," Mick Fiocchi, WXPR's general manager, said in a *Chicago Tribune* article sent to us by Elmer J. Wallesen of La Grange Park, Ill. "We tell people this is their radio station." And while most public radio stations draw the bulk of their pledges during the popular National Public Radio programs, "here most calls during fund raising come during local programming."

Folksy, rural-flavored shows are a staple at the station—and the reason for its success. "I try to create this image of a man talking to you from his old homestead, sitting in a rocking chair...and playing old records on the phonograph," said "Brother Bill" Kaul, host of a four-hour, Saturday afternoon bluegrass show. Other programs include thrice-weekly reports about birds and "Polka Your Troubles Away." "We definitely offer an alternative to what else is on the air," Fiocchi said. "Where else can you hear jazz, bluegrass, blues and classical music all within a 24-hour period?"

In Brief: Although a year has passed since the FCC released its list of 79 stations that would be permitted to move to the expanded AM band—between 1605 and 1705 kHz—the response on the part of broadcasters and others in the industry has been lukewarm. Finally, though, it appears someone will set up shop alongside the traveler information stations and vintage cordless phones—the U.S. Army. *Radio World* reports that the Army Broadcast Service will begin a weeklong test of its new mobile radio station on 1670 kHz sometime in late 1995. No word yet on the power or where broadcasts might originate, but the article does note that the Army hopes to hear from DXers.

WKRH-FM in Bath, Maine, fell silent April 20 following a buyout by new management, says *POP'COMM* reader Betty Lachaussee, of Otisfield, Maine. The former WIGY first signed on in 1971, and became WKRH in the early 1990. In early May, the new owners traded 106.5 MHz and a format of progressive hard rock for 105.9 MHz and Christian radio as WBCI.

There is a method to our madness, after all. Researchers at Boston University and the University of Michigan have determined that background noise such as static actually may make it easier for the brain and ears to pick out a faint signal—in our case, a radio signal. Noise can work to an advantage, one scientist told Knight-Ridder Newspapers, by serving as a backdrop against which a faint pattern then can become discernable.

Thanks: News clippings, photographs, bumper stickers and QSLs are always welcome. Send 'em to "Broadcast DXing" at *POP'COMM* headquarters. Happy holidays, and until next month, 73. ■

Seeking Changed AM Facilities

KARS	Belen, NM	860 kHz	Seeks daytime increase to 1.3 kW.
KEBE	Jacksonville, TN	1010 kHz	Seeks increase to 1 kW.
KKCQ	Fosston, MN	1480 kHz	Seeks night reduction to 90 watts.
KLYC	McMinnville, OR	1260 kHz	Seeks to 1 kW.
WANN	Annapolis, MD	1190 kHz	Seeks move to Highland Beach, 1 kW nights.
WCVN	Brantley, AL	1080 kHz	Seeks move to 1030 kHz, 5 kW/400 watts.
WJJL	Niagara Falls, NY	1440 kHz	Seeks increase to 5 kW/ 750 watts.
WLOU	Louisville, KY	1350 kHz	Seeks daytime reduction to 2.2 kW.
WNGA	Nashville, GA	1600 kHz	Seeks move to 750 kHz, 5 kW days.
WRMR	Cleveland, OH	850 kHz	Seeks increase to 50 kW days.
WTNN	Farragut, TN	670 kHz	Seeks increase to 2.5 kW.
WXLX	Newark, NJ	620 kHz	Seeks move to Jersey City, 5/8 kW
WXTL	Jacksonville Bch, FL	1010 kHz	Seeks move to Plains. 810 watts.
WYLF	Penn Yan, NY	850 kHz	Seeks to add nights at 45.5 watts.

Seeking Permits to Construct New AM Stations

AK	St. Paul	540 kHz	2.5 kW
CO	Gunnison	1490 kHz	1 kW
NJ	Hackettstown	1510 kHz	900/230 watts

Changed AM Facilities

KENO	Las Vegas, NV	1460 kHz	Reduced to 10 kW/625 watts.
KENS	San Antonio, TX	1160 kHz	Increased days to 10 kW.
KGOL	Humble, TX	1180 kHz	Reduced days to 8.5 kW.
KRGS	Rifle, CO	810 kHz	Moved to 690 kHz, 900/ 11.6 watts.
KIJN	Farwell, TX	1060 kHz	Increased days to 10 kW.
WDER	Derry, NH	1320 kHz	Increased days to 10 kW.
WRYM	New Britain, CT	840 kHz	Added nights at 125 watts.

Changed FM Frequencies

WGGD-FM	Melbourne, FL	102.3 MHz	Moved to 95.1, 6 kW.
WWIQ	Gray, GA	96.5 MHz	Moved to 96.7 MHz.

Scanners/CB/Weather Stations

New Scanner Products Available

Now it's easy to purchase communications, emergency management supplies, weather forecasting equipment and more directly from Communications Electronics Inc. Your **free fax-on-demand catalog** including unadvertised specials is instantly available by calling 313-663-8888 from your fax machine.

Bearcat Scanners

Monitor police, fire, marine, aircraft, emergency medical transmissions and more with a Bearcat scanner.

Bearcat 9000XLT-U base/mobile $369.95
Bearcat 3000XLT-U handheld $344.95
Bearcat 890XLT-U base/mobile/weather alert $227.95
Bearcat 860XLT-U 100 channel base $154.95
Bearcat 760XLT-U base/mobile $189.95
Bearcat 700A-U information mobile $144.95
Bearcat 560XLA-U base/mobile $76.95
Bearcat 220XLT-U handheld/SPECIAL $207.95
Bearcat 178XLT-U base with weather alert $124.95
Sportcat 150-U handheld with 800 MHz. $158.95
Bearcat 148XLT-U base with weather alert $83.95
Bearcat 120XLT-U handheld $129.95
Bearcat 80XLT-U handheld with 800 MHz. $144.95
Bearcat BCT7-U information mobile $168.95

Weather Stations

Now you can be your own weather reporter with the Davis Weather Monitor II. Our top-of-the-line weather station combines the most advanced weather monitoring technologies available into one incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Push a button, and read indoor and outdoor temperature, wind chill, humidity and barometric pressure. Our package deal includes the new ultra high resolution 1/100 inch rain collector part **#7852-U**, and the external temperature/humidity sensor, part **#7859-U**. The package deal is order **#DAV1-U** for $479.95 plus $15.00 shipping. If you have a personal computer, when you order the optional Weatherlink computer software for $139.95, you'll have a powerful computerized weather station at an incredible price. For the IBM PC or equivalent order part **#7862-U**. Apple Mac Plus or higher including PowerBook, order part number **7866-U.**

The Weather Monitor II (7440) comes complete with anemometer with 40 feet of cable, external temperature sensor with 25 feet of cable, junction box with 8 feet of cable, AC power adapter, detailed instruction booklet and one year limited factory warranty.

Davis Weather Monitor II **7440-U** $334.95
Davis Weather Wizard III **7425-U** $154.95
Davis Perception II indoor stand-alone weather monitor **7400-U** .. $124.95
Davis Remote Display Unit **7815-U** $84.95
Davis Rain Collector II 0.01" **7852-U** $59.95
Davis Rain Collector II 0.2 mm **7852METRIC-U** $59.95
Davis Rain Gauge Stand-alone 0.01" **7520-U** $79.95
External Temperature/Humidity Sensor **7859-U** $99.95
Davis Anemometer Mast Mount **7890-U** $15.95
Weatherlink Software for IBM PC-Version 3.0 **7862-U** $139.95
Weatherlink Software for Apple-Version 3.0 **7866-U** $139.95
4-Conductor 40' (12.2 m) extension cable **7876-U** $17.95
6-Conductor 40' (12.2 m) extension cable **7878-U** $21.95
8-Conductor 25' (7.6 m) junction box cable **7880-U** $14.95
8-Conductor 50' (15.2 m) junction box cable **7881-U** $24.95
8-Conductor 100' (30.5 m) junction box cable **7882-U** $44.95
Modem Adaptor 25-Uin for communications port **7870-U** $9.95
Car/Boat/RV Lighter Power Cord **7873-U** $9.95
2400 baud modem for Weatherlink **MEXT-U** $29.95
Talking weather card - Call 313-994-9000 for demo **IT1-U** $474.95
Weatherlink language disks: Française, Deutsche, Italiana, Española **7863-U** $24.95
Barometer, Indoor Hygrometer & Thermometer, Clock/Calendar **BA888-U** .. $89.95
Indoor-Outdoor Thermometer/Barometer & Hygrometer by OSI **RA213-U** .. $79.95
Thermometer with transparent calender & clock display by OSI **TC188-U** .. $19.95
Thermometer with AM/FM clock radio by Oregon Scientific **CR388-U** $39.95
Indoor/Outdoor Thermometer with Jumbo Display by OSI **JB880EX-U** $24.95

Bearcat® 9000XLT-U Radio Scanner

Mfg. suggested list price $769.95/**CE Special $369.95**
500 Channels · 20 banks · Alpha numeric display
Turbo Scan · VFO Control · 10 Priority channels
Auto Store · Auto Recording · Reception counter
Frequency step resolution 5, 12.5 & 25 KHz.
Size: 10-1/2" Wide x 7-1/2" Deep x 3-3/8" High
Frequency Coverage:
25.000-549.995 MHz., 760.000-823.995 MHz., 849.0125-868.995 MHz., 894.0125-1,300.000 MHz.

The Bearcat 9000XLT gives you pure scanning satisfaction with amazing features like TurboSearch™ to search VHF channels at 300 steps per second. This base and moble scanner is ideal for surveillance professionals because it has a selectable attenuator to help eliminate annoying intermodulation from adjacent frequencies in highly populated areas and selectable AM, Wide FM and Narrow FM modes that allow you to change the default receiving mode of the BC9000XLT. Other features include ***Auto Store*** – Automatically stores all active frequencies within the specified bank(s). ***Auto Recording*** – This feature lets you record channel activity from the scanner onto a tape recorder. **Hi-Cut filter** to help eliminate unwanted static noise. You can even get an optional *CTCSS Tone Board* (Continuous Tone Control Squelch System) which allows the squelch to be broken during scanning only when a correct CTCSS tone is received. For maximum scanning enjoyment, order the following optional accessories: **PS001** Cigarette lighter power cord for temporary operation from your vehicle's cigarette lighter $14.95; **PS002** DC power cord - enables permanent operation from your vehicle's fuse box $14.95; **MB001** Mobile mounting bracket $14.95; **BC005** CTCSS Tone Board $54.95; **EX711** External speaker with mounting bracket & 10 feet of cable with plug attached $19.95. The BC9000XLT comes with AC adapter, telescopic antenna, owner's manual and one year limited warranty from Uniden.

CB/GMRS Radios

The Maxon GMRS 210+3 transceiver is a PLL synthesized 10 channel radio on General Mobile Radio Service frequencies. It's the ideal radio for long range communications. Two repeater channels are programmable and one channel (462.675 MHz.) is set aside for emergency and safety communications. The seven remaining interstitial frequencies 462.5625, 462.5875, 462.6125, 462.6375, 462.6875 & 462.7125 MHz are all-purpose GMRS radio channels. 2 watts of RF power for exceptional transmitting range. Up to 5 watts when used with the supplied 12 volt vehicular DC power cord. CTCSS built-in. Includes 450mAh Ni-cad rechargeable battery pack, AC/DC wall battery charger, owner's manual, FCC license application, belt clip, antenna. Call 1-800-USA-SCAN to order.

Maxon GMRS210+3-U GMRS transceiver $188.95
SPECIAL Buy 2 or more GMR210+3 at $174.95 each

WTA3DT-U Ni-cad battery charger for WTA6GN4 & WTA6GN2 .. $58.95
WTA6GN4-U Ni-cad pack gives 4 watts power with 210+3 ..... $55.95
WTA6GN2-U Ni-cad pack gives 2 watts power with 210+3 ..... $29.95
WTA6GA-U Alkaline battery case - requires 6 AA batteries $9.95
WTA8GA-U Carrying case for Maxon GMRS210+3 ..... $29.95
WTA10G-U Speaker/microphone for Maxon GMRS210+3 ..... $18.95
WTA13G-U Push-to-talk mini-VOX headset for GMRS210+3 ..... $47.95
WTA14-U Antenna adaptor/screw-in male to BNC connector $9.95
ANT4GM-U 1/4 wave UHF magnetic mount mobile antenna $29.95

Cobra 2010GTLWX-U SSB base with weather alert; $379.95
Cobra 148FGTL-U CB with frequency counter $209.95
Cobra 29LTDWX-U CB with weather alert $114.95
Cobra HH40-U CB 40 channel handheld transceiver $99.95
Ranger RCI2950-U 25 watt 10 meter transceiver $239.95
Uniden GMR100-U GMRS handheld transceiver $144.95
Uniden WASHINGTON-U SSB CB Base († $25.00 shipping) $199.95
Uniden GRANTXL-U SSB CB Mobile $139.95
Uniden PRO538W-U CB & Weather $59.95

VHF Transceiver

RELM® WHS150-U Transceiver/SPECIAL

Mfg. suggested list price $481.67/**CE price $299.95**

Police and fire departments depend on the RELM WHS150 transceiver for direct two-way communications with their police, fire department, civil defense agency or ham radio repeater. The WHS150 is our most popular programmable five watt, 16 channel handheld transceiver that has built-in CTCSS, which may be programmed for any 39 standard EIA tones. Frequency range 148.000 to 174.000 MHz. Will also work 144.000-148.000 with slightly reduced performance. The full function, DTMF compatible keypad also allows for DTMF Encode/Decode and programmable ANI. Weighing only 15.5 oz., it features dealer programmable synthesized frequencies either simplex or half duplex in both 5.0 and 6.25 KHz. increments. Other features include scan list, priority channel, selectable scan delay, selectable 5 watt/1 watt power levels, liquid crystal display, time-out timer and much more. When you order the WHS150 from Communications Electronics Inc., you'll get a complete package deal including antenna, battery, belt clip and user operating instructions. Other accessories are available. A leather carrying case with swivel belt loop part **#LCWHS** is $49.95; rapid charge battery charger, part **#BCWHS** is $69.95; speaker/microphone, part **#SMWHS** is $54.95; extra ni-cad battery pack, part **#BPO07** is $59.95. The radio technician maintaining your radio system must order programming instructions part **#PI150** for $18.00 to activate this radio. FCC license required for United States operation.

Other neat stuff

PH5000-U Waber 500VA/340 Watt computer uninterruptable power supply $159.95
WX70-U weather radio with National Weather Service storm alert $29.95
WB-U USA Today The Weather Book, Guide to USA weather by Jack Williams $15.95
PSUN-U Partly Sunny, Weather Junkie's Guide to Weather by Alan Fields $11.95
Grundig Yacht Boy 400-U digital portable shortwave – 40 memory $179.95
Grundig Yacht Boy 230-U portable shortwave receiver $109.95
Sangean ATS800-U portable 20 memory shortwave receiver $69.95
Sangean ATS803A-U portable shortwave w/AC adapter – 9 memory $129.95
Sangean ATS808-U portable 45 memory shortwave receiver $129.95
Uniden EXP9200-U 900 MHz. 1 or 2 line spread spectrum cordless phone . $289.95
Uniden EXP9100-U 900 MHz. 1 line cordless spread spectrum telephone ... $224.95
Uniden EXP901-U 900 MHz. 1 line cordless analog telephone $149.95
Bogen FR3110-U Digital FAX Friday Fax-on-Demand & answering system ... $399.95
Bogen FR3020-U memory module for Fax Friday/up to 36 minutes $99.95
Bogen FR2000-U Digital two-line voice mail & answering machine $279.95
Bogen FR0018-U memory module, doubles recording time to 36 minutes $79.95
FANS P161P-U 60 name/number caller ID, unwanted call blocker, paging .. $149.95
SNI ID200-U Bouncer name/number caller ID, call reject, forward $89.95
ICOM GP22-U handheld global positioning system (GPS) $489.95
RELM WHS150-U VHF handheld 5 watt, 16 channel transceiver $299.95
RELM RH256NB-U VHF 25 watt, 16 channel synthesized transceiver $289.95
Ranger RCI2950-U 25 watt 10 meter ham radio transceiver $239.95
Cobra RDL712SW-U Safety Alert & Super Wideband Laser/Radar receiver .. $139.95
Uniden LRD6399SW-U Super Wideband Laser/Radar receivep-VG2 protection $99.95
ANTK-U VHF scanner/VHF transmitting antenna PL259 connector $29.95
ANTMMBNC-U magnet mount scanner antenna w/ BNC connector $29.95
ANTMMMOT-U magnet mount scan antenna w/Motorola plug $29.95
ANTMMPL-U magnet mount scan antenna with PL259 connector $29.95
ANTSGBNC-U glass mount scanner antenna with BNC connector $29.95
ANTSGMOT-U glass mount scanner antenna with Motorola jack $29.95

Buy with confidence

It's easy to order from us. **Mail orders to:** Communications Electronics Inc., P.O. Box 1045, Ann Arbor, Michigan 48106 U.S.A. Add $15.00 per radio product or weather station for U.P.S. ground shipping and handling in the continental U.S.A unless otherwise stated. Add $10.00 shipping for all accessories and publications. Add $10.00 shipping per antenna. For Canada, Puerto Rico, Hawaii, Alaska, Guam, P.O. Box, or APO/FPO delivery, shipping charges are two times continental U.S. rates. Michigan residents add state sales tax. No COD's. Satisfaction guaranteed or return item in 31 days for refund, less shipping. 10% surcharge for net 10 billing to qualified accounts. All sales are subject to availability, acceptance and verification. Prices, terms and specifications are subject to change without notice. We welcome your Discover, Visa, American Express or MasterCard. Call anytime 1-800-USA-SCAN or 800-872-7226 to order toll-free. Call 313-996-8888 if outside the U.S.A. FAX anytime, dial 313-663-8888. For technical assistance, call our technical support hotline for $2.00 per minute at 1-900-555-SCAN. Dealer and international inquiries invited. Dial 313-663-8888 for fax-on-demand info.

Price schedule effective 9/1/95 AD #090195GEN Copyright © 1995 Communications Electronics Inc

For credit card orders call

1-800-USA-SCAN

COMMUNICATIONS ELECTRONICS INC.
Emergency Operations Center
P.O. Box 1045, Ann Arbor, Michigan 48106-1045 U.S.A.
For information call 313-996-8888 or FAX 313-663-8888

BY KIRK KLEINSCHMIDT, NTØZ
AMERICAN RADIO RELAY LEAGUE HQ

2-Meter Travelin': Take Your Handheld on the Road!

Now that you've mastered using your handheld 2-meter rig around town, why not take it along on your next cross-country outing? In addition to providing tried-and-true emergency communications, include a handy FM transceiver in your travel kit to add safety, fun and new friends to your next road trip.

Before you go, be sure to brush up on how to use your radio—especially the programming functions you rarely use (setting repeater splits and subaudible tones, etc.)—how to power your handheld (from batteries and from your car's cigarette lighter socket) and boost its signal (car-mounted antennas, bigger "rubber duckies" and so on). A little extra effort upfront will make life on the road a lot easier! Reviewing repeater etiquette and procedures wouldn't hurt either.

Now that you've decided to take a "radio-active road trip," this month's column is full of ideas on how to hit the road in style with your VHF gear! So, let's go!

2-Meter Basics

While traveling, most repeaters you'll come across will be on frequencies other than the ones you're used to. How will you know what those frequencies are and where the repeaters are located? *The ARRL Repeater Directory,* a pocket-size reference that's a must-have for traveling VHF and UHF operators, probably is the best single info source (available from *POP'COMM* at 800-853-9797).

Accessing repeaters on the road is a lot like using the ones you're familiar with close to home. Common sense will take you far, as will common courtesy. And don't be shy about letting people know you're on the air and traveling through their little corner of the world. Variety is the spice of life—as well as ham radio—and by and large, most hams will welcome you to whatever machine you're keying up. The few who won't aren't worth bothering with anyway.

Here are a few tips to increase everyone's 2-meter enjoyment:

1. Listen to that new repeater before transmitting (of course, if you have an emergency, step right up and key the mike). Often, the machine's voice controller periodically will announce any special operating procedures (or events taking place).

2. To let people know you're around, simply say, "This is W1XYZ monitoring." Or, while being brief, be a bit more revealing: "This is W1XYZ from Hartford, Conn., traveling through Ottumwa on County Road B." Or be specific: "This is W1XYZ. I'm just east of Ottumwa and I'm looking for directions." Contrary to the beliefs of some, ham radio still is a friendly hobby. Don't be afraid to let people know you're available and interested in chatting.

3. Don't kerchunk the repeater. Pause briefly after each transmission to keep the machine clear for emergency traffic.

4. If you get a rip-roaring conversation started, try to move to a simplex frequency, if possible. That will free up the repeater for more mobile traffic. (In some rural areas, the repeaters are almost never busy. If the locals seem content to ragchew on their machine, feel free to follow their lead—remembering to pause after transmissions, of course!)

5. Pretend you are in the living room of someone new you have just met, and behave accordingly.

Radio-Active Road Trips

Here are a few suggested travel activities to keep you busy on your journey. Remember: You may make so many new friends along the way that extra transit time may be required. Amateur radio is incredibly diverse; you'll undoubtedly come up with your own activities and procedures once you're under way. Have fun!

Emergencies: Arguably, this is why many hams carry VHF/UHF radios (or cellular phones) in their cars. The nature of the emergency will determine how you use the local radio systems. If lives are at stake, don't worry about etiquette and protocol—get in there and grab the mike. Emergency ops have the whole show, so if your need is legitimate, everyone will assist you.

Ragchewing. Ragchewing: Ham radio's oldest activity is the mainstay of many radio-active travelers. On 2 meters, towns, repeaters and conversations come and go periodically depending on geography and population. There are a lot of interesting people to chat with, that's for sure. With your rig along, you'll meet them for yourself. You'll discuss skydiving, cookie recipes, steam tractors, wild nightclubs—or all three! Just be sure to coax the "lurkers" into action by your "This is W1XYZ travelin' through" calls on new machines.

Asking for Directions: Although not exactly ragchewing, asking for directions often can whip up a good conversation. Some hams seem to live to dispense travel advice, and somehow they know every nook and cranny of the surrounding countryside. Consider yourself lucky! You've just met the local version of the Shell Answer Man, and he (or she) happens to be a ham!

Eyeball QSOs: Every now and then—especially if your pace is leisurely—an on-air ragchew can lead to a face-to-face encounter (sometimes called an "eyeball QSO" in some parts). You'll probably be invited to lunch or coffee, or to see someone's new ultralight airplane, or whatever! In addition to the friends you'll likely make, these side adventures could be more interesting than your planned destinations, so don't discount them up front!

Saturday Morning Ham Breakfasts: In many parts of the country, hams in each area get together for a Saturday morning breakfast usually held at a local family restaurant (days and times vary regionally, so ask around). The hour that these group get-togethers commence usually depends on tradition and the average age of those attending—old-timers usually get up early, baby boomers often like to sleep late on weekends. Some Saturday morning groups hang around for stragglers all morning long. By the time the boomers stroll in, the senior citizens are fully caffeinated!

Club Meetings: As long as the sun hangs in the sky, you can be sure that ham clubs all across the country will hold meetings. Times and places vary, but you probably can set your watch by their regularity. If your travels coincide with a local meeting, why not stop by? Even if the business meeting is long-winded, food, fun and friends almost always follow! Who knows, you might even wind up being the keynote speaker! To find out about club meetings, ask around on the repeaters—if you're not invited by someone before you get the chance to inquire, that is.

Flea Markets and Hamfests: What traveling ham could bypass a hamfest? Certainly not me! The hamfest calendar section in *CQ* or *QST* will keep you up to date on most hamfests and swap meets. And don't worry about finding the place: Someone always will be able to "talk you in" via repeater or simplex. Ask around for unpublicized events, too. They're out there!

Scanning Outside the Ham Bands: Many modern FM handhelds receive frequencies outside the 2-meter amateur bands. These frequencies, from about 118 to 174 MHz, include aeronautical, police,

fire, sheriff, trains, public service, federal government, military and business, among others. Some newer rigs even double as VHF scanners, adding fun to what might otherwise be boring miles. Yet, some states restrict mobile scanners, so be sure to behave yourself appropriately—at least in situations where your radio may be eyed suspiciously by authorities. A run-in with the local radio police won't improve your itinerary!

Weather Radio: When in Kansas or Nebraska, if you want to see if a storm's up ahead you can look out the windshield of your car and scan the horizon for miles. If bad weather is in store, you'll likely know about it in advance! In most other areas you won't be so lucky (or maybe that Heartland storm is sneaking up behind you!). NOAA weather radio broadcasts on 162.400, 162.475 and 162.550 MHz are run by the National Weather Service. These continuous broadcasts contain weather forecasts, observations and alerts for whatever area you happen to be traveling through. If your 2-meter rig can receive the NOAA broadcasts, you'll have a 24-hour "weather channel" along for the ride. (If you're fortunate, you won't be pressed into service as a traveling storm spotter.)

Hiking, Biking and Camping: If your travel destinations include more adventurous outdoor activities, your handheld transceiver more than likely will be up to the tasks of emergency and casual communications (and it may help you receive weather alerts). The same considerations apply, although weight and bulk probably will be more important (if your car isn't up to transporting a few extra pounds, you probably won't be traveling in it for long anyway!). If your outdoor adventure party includes other hams, having your handheld in your gear makes even more sense.

Mountaintopping, Hoteltopping and Skyscrapertopping: Elevation and VHF go together. During your travels you'll probably come across some type of towering structure, natural or man-made. If you're going to the top—even if it's to a hotel room on the 24th floor—take your HT along. See how far it'll "get out." If conditions are right (summer is the season), you will be surprised! Be careful: This may be addictive!

This short list of possible road trip activities only scratches the surface. And although it's not exhaustive by any means, I hope you can see that there's a lot of fun to be had in making your FM rig a mandatory traveling companion. Here's to the open road and open repeaters!

Write in

If there are topics you'd like to see covered in The Ham Column, send your suggestions, QSL cards and letters to me at American Radio Relay League, Department PCN, 225 Main St., Newington, CT 06111. We'd like to know what you're interested in, so don't be shy! ■

PRICE BREAK-THROUGH
~~$450~~ $379

NEW
Radio Shack
PRO-26
200-Channel
PORTABLE
Scanner

- Continuous coverage from 25 MHz to 1.3 GHz (except cellular telephone frequencies)
- Triple-conversion receiver virtually eliminates unwanted interference
- Hyper-Scan™ circuit scans at 50 channels/second
- NFM/WFM/AM mode-select permits tuning TV audio signals
- Automatic scan of 200 memory channels
- Weather key for instant, up-to-the-minute forecasts
- BNC antenna jack for flexible antenna (supplied) or mobile/base antenna (optional)
- Requires 4 "AA" Ni-Cd or alkaline batteries or AC or DC adaptor

Risk-FREE TRIAL 30 DAYS
Try for 30 days and if not delighted, return for a full refund, S.&H. excluded. Credit card holders call toll-free or send $335.00 plus $14.95 S. & H. Check or USPS - Money order. Allow 3 weeks for del. (Texas residents add 8.25% sales tax).

CALL FREE 1-800-433-SAVE
Since 1981
8-5 Central Mon.-Fri.

The Difference Is The Price
USRADIO®
USRadio 377 Plaza, Granbury, Tx. 76048

NEW!!! RECORD-CAT
Revolutionary New Scanning Tool

ATTENTION SCANCAT OWNERS . . .
TAKE CONTROL OF YOUR TAPE RECORDER WITH RECORD-CAT!

A "Plug & Play" tape recorder controller interface, RECORD-CAT plugs into your printer port & tape recorder. Using SCANCAT, RECORD-CAT permits fully programmable audio recording by receive frequency!

(SCANCAT GOLD required.) RECORD-CAT $29.95 (plus $5.00 S&H)

CAT-WHISKER
TIRED OF YOUR HANDHELD SCANNER ALWAYS FALLING OVER JUST TO KEEP THE ANTENNA "VERTICAL?"

Try our unique, swivel base, telescopic scanner antenna. Our new CAT-WHISKER lets you lay your handheld scanner on its back and still keep the antenna vertical!
- Swivels to ANY angle
- Easily adjusts to any length AND frequency
- Fits ANY scanner with a BNC antenna connector
- Fits on BACK or TOP mount scanner antenna inputs

What other antenna will let you lay your handheld on a car seat and still receive?

CAT-WHISKER #1 (5 to 23 inches) ...$19.95
CAT-WHISKER #2 (6 to 36 inches) ...$24.95
(plus $2.50 S & H)

WE CARRY INTERFACES FOR ICOM & AOR AR8000 IN STOCK

SCANCAT GOLD
Since 1989, The Recognized Leader in Computer Control
IMPROVED!

Once you use SCANCAT with YOUR radio, you'll NEVER use your radio again WITHOUT SCANCAT!
SCANCAT supports most radios by:
AOR, DRAKE, KENWOOD, ICOM, YAESU and JRC (NRD)
Plus PRO-2005,6 & 2035/OS456, Lowe HF-150, and Watkins-Johnson HF-1000

Christmas Special!!! Buy SCANCAT GOLD before Dec. 31 and receive a FREE frequency disk (3.5 MB of files). A $15 value

SCANCAT 6.0 FEATURES
- Search between any 2 frequencies.
- Search by ANY increment.
- Create Disk files.
- Import from most text formats to a working SCANCAT file.
- Log found frequencies to files while scanning.
- Scan Disk Files Frequencies.
- Spectrum Analysis to Screen OR Printer.

SCANCAT - GOLD FEATURES
We simply don't have the space to tell you ALL the new GOLD features
SCANCAT-GOLD includes ALL ABOVE 6.0 FEATURES PLUS
- Link up to 15 frequency disk files.
- D-BASE IMPORT including Spectrum CD.
- Scan HF & VHF Icom's simultaneously.
- PRINT to ANY printer, or Disk File.
- Automatic BIRDIE LOCKOUT.
- Link up to 15 search banks.
- IMPORT virtually any database.
- Search by CTCSS & DCS TONES with PRO2005, 6/2035 (& ICOM/DC440).
- MULTIPLE search filters.

PLUS - POWERFUL COMMERCIAL FEATURES SUCH AS:
- Demographic search for frequency co-ordination and 2-way Usage Analysis.
- Detailed logging to ASCII type files with DATE, TIME, Sig Str, Air Time
- UNLIMITED file sizes with our exclusive SCANCAT filing method.
- Exclusive "MACRO" control by frequency of Dwell, Hang, Resume. Sig. Treshhold and even 6 separate programmable, audible alarms.
- Command line options for TIMED ON/OFF (Unattended) logging/searches.

Now Supports Opto Scout
Now Supports AOR AR8000

*SCANCAT IS NOT COPY PROTECTED —USE ON AS MANY COMPUTERS AS YOU NEED *
SCANCAT will run on virtually ANY 640K computer, EVEN HP-100XLT PALMTOP!

SCANCAT comes ready to run ALL supports radios within only ONE program. SCANCAT makes your listening hobby a breeze! Plus, the included SCANPORT allows you to convert your favorite BBS, D Base or Text Files to a running SCANCAT file: 100+ Page manual included. Requires a 640K MS-DOS computer w/RS-232C serial port - hard disk recommended. Manufacturer's Interface not included.

CALL or WRITE for FREE information or our $5.00 FULLY OPERATIONAL DEMO DISK (includes shipping/handling). ORDER NOW & RECEIVE as a BONUS, FOUR SCANCAT FREQUENCY FILES!

SCANCAT GOLD	$94.95	UPGRADE to GOLD from any version	$24.95
SCANCAT 6.0	$69.95		
SQUELCH DETECT CABLES	$24.95	PLUS $5.00 S & H	
OPTOScan456/535 kit $299 ($10 s/h)		$7.50 FOREIGN	

INTERNET WEB ADDRESS - http://WWW.bcrr.secret.com/scancat.html
WEB E-MAIL - scancat@bcrr.secret.com

Order OS456/535 & SCANCAT-GOLD combined and receive our $15 frequency disk. FREE!

FREE DEMO ON BBS & WWW

COMPUTER AIDED TECHNOLOGIES
P.O. Box 18285 Shreveport, LA 71138
Orders Only (318) 636-1234 FAX (318) 686-0449 (24 hrs) Live Tech Support (318) 687-2555 (9 a.m. - 1 p.m. Central M-F)
Nitetime BBS (SCANCAT File Area) (318) 631-3082 (7 p.m. - 6 a.m. Central).

Order direct or call your favorite dealer

YOU SHOULD KNOW

BY CAPT. WILLIAM MAULDIN, WG4R

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

A Radio Service for Families

This column brought you news of the proposed Family Radio Service several months ago. The RadioShack division of Tandy Corp. petitioned the Federal Communications Commission to allow unlicensed low-power radios on UHF.

This proposal, first presented to the commission in July 1994, would create an unlicensed UHF-FM radio service. According to the petition, the new Family Radio Service would share "unused and little used" General Mobile Radio Service, or GMRS frequencies. GMRS, once known as Class A Citizens Band, operates at 462 and 467 MHz.

GMRS users were up in arms upon hearing the proposal. GMRS users are licensed and have established channels and user patterns. There are many wide-coverage repeaters in the GMRS band that are used by companies and individuals. Their organized opposition to the unlicensed Family Radio Service has been interesting to watch. GMRS users are fighting to protect their frequencies.

In their proposal for the creation of the Family Radio Service, Tandy told the FCC that the service would employ current technology. Users would be unlicensed, and would use lightweight, palm-sized transceivers for low-power, short-range communications. They also said that the proposed FRS would meet the growing demand for an affordable, practical method of direct communications between individuals. In addition, Tandy said the new proposed service would present no impact to present GMRS users. However, GMRS users do not agree. They presented the case of the unlicensed 27-MHz Citizens Band as an example of a massive unlicensed mess. Many public safety groups have repeaters and use GMRS extensively.

Presently, GMRS users are assigned their frequencies by the FCC when licensed. Normally, only one or two frequencies are allocated to the license holder. The GMRS license form is not easy to fill out, and can be complicated for those not familiar with FCC license applications. Most GMRS stations are limited to 50 watts. Unlike ham band repeaters, GMRS users are prohibited from using phone-patch devices on their repeaters. Also, advertising, sales promotions and other commercial activities are prohibited by FCC rules. Most license holders are allocated only one repeater frequency pair, however, they may operate on any of the so-called assigned interstitial GMRS simplex channels.

GMRS Frequencies

462.550 MHz	Base, repeater output and mobile
462.5625 MHz	Interstitial low-power simplex unit to unit
462.575 MHz	Base, repeater output and mobile
462.5875 MHz	Interstitial low-power simplex unit to unit
462.600 MHz	Base, repeater output and mobile
462.6125 MHz	Interstitial low-power simplex unit to unit
462.625 MHz	Base, repeater output and mobile
462.6375 MHz	Interstitial low-power simplex unit to unit
462.650 MHz	Base, repeater output and mobile
462.6625 MHz	Interstitial low-power simplex unit to unit
462.675 MHz	Base, repeater output and mobile/Travelers Aid
462.6875 MHz	Interstitial low-power simplex unit to unit
462.700 MHz	Base, repeater output and mobile
462.7125 MHz	Interstitial low-power simplex unit to unit
462.725 MHz	Base, repeater output and mobile
467.550 MHz	Mobiles—repeater input only
467.575 MHz	Mobiles—repeater input only
467.600 MHz	Mobiles—repeater input only
467.625 MHz	Mobiles—repeater input only
467.650 MHz	Mobiles—repeater input only
467.675 MHz	Mobiles—repeater input only/Travelers Aid
467.700 MHz	Mobiles—repeater input only
467.725 MHz	Mobiles—repeater input only

The General Mobile Radio Service has one special frequency that makes the service appealing. This is known as the "Travelers Aid" frequency. Under FCC rules, licensed GMRS users can switch to and legally use the Travelers Aid frequency although they are not specifically licensed on the frequency. The Tandy proposal would make this frequency pair available to unlicensed Family Radio Service users for emergency or assistance communications.

Not Everyone Wants It

The Personal Radio Steering Group of Ann Arbor, Mich., a GMRS user group, has strongly opposed opening the GMRS band for unlicensed use. PRSG has said that they believe the mixing of licensed and unlicensed operators on the same frequencies will disrupt and impair current legal operations on the GMRS band. REACT, known as a CB organization, supports the principle of the Family Radio Service but opposes making an allocation in the GMRS band for this service.

Both REACT and PRSG fear that once the unlicensed radios are available to the general public, millions of users will flood the Travelers Aid channels with abuse and illegal communications, making repeaters useless for those who truly have emergencies or need assistance.

Radio manufacturers such as Motorola, Tandy and Uniden see a massive market for low-power UHF handhelds, and are supporting the Tandy proposal with the FCC. The creation of the new FRS would make low-power, short-range, dependable communications available to just about everyone, according to industry news publications quoting the manufacturers.

For those who are unfamiliar with the General Mobile Radio Service and the frequencies allocated, see the accompanying box of frequencies to plug in your scanner.

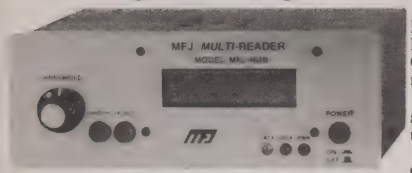
There are eight authorized repeater channels. Repeaters generally are paid for and maintained by the user, not by public funds. The 462-MHz frequency in each frequency pair is the repeater output channel. There is also authorized simplex communications on the repeater output frequency. The 467 MHz frequency is the repeater input frequency. No simplex, or unit-to-unit direct transmissions are authorized on this frequency.

What Will Be Decided?

The initial round of comments that were submitted to the FCC on the proposed new

Tap into *secret* Shortwave Signals

Turn mysterious signals into exciting text messages with this new MFJ MultiReader™



MFJ-462B **$169.95**

Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chrips, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR turn into exciting text messages as they scroll across your easy-to-read LCD display.

You'll *read* interesting commerical, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . . traffic your friends can't read -- unless they have a decoder.

Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqui News in Iraq -- all on RTTY.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

Listen to maritime users, diplomats and amateurs send and receive error free messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- from all over the world -- Australia, Russia, Hong Kong, Japan, Egypt, Norway, Israel, Africa.

Printer Monitors 24 Hours a Day

MFJ's exclusive *TelePrinterPort*™ lets you monitor any station 24 hours a day by printing their transmissions to your Epson compatible printer.

Printer cable, **MFJ-5412**, $9.95.

MFJ *MessageSaver*™

You can save several pages of text in 8K of memory for re-reading or later review.

High Performance Modem

MFJ's high performance *phaselock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

It's easy to read -- the 2 line 16 character LCD display with contrast adjustment is mounted on a sloped front panel for easy reading.

Copies most standard shifts and speeds. Has *MFJ AutoTrak*™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, $12.95. 5¼x2½x5¼ inches.

No Matter What Guarantee

You get MFJ's famous one year *No Matter What*™ *unconditional* guarantee. That means we will repair or replace your *MFJ MultiReader*™ (at our option) *no matter what* for a full year.

Try it for 30 Days

Order an *MFJ-462B MultiReader*™ *from* MFJ and try it in your own setup -- compare it to any other product on the market regardless of price.

Then if you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping).

Order today and try it -- you'll be glad you did.

Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to-operate active antenna . . . quiet . . . excellent dynamic range . . . good gain . . . low noise . . . broad frequency coverage."

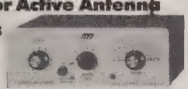
Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz to 30 MHz.

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95.

$129.95 MFJ-1024

Indoor Active Antenna

MFJ-1020B **$79.95**



Rival outside long wires with this *tuned* indoor active antenna. *"World Radio TV Handbook"* says MFJ-1020 is a "fine value . . . fair price . . . best offering to date . . . performs very well indeed."

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 9x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312B, $12.95.

Compact Active Antenna

MFJ-1022 **$39.95**

Plug this new *compact* MFJ all band active antenna into your general coverage receiver and you'll hear strong clear signals from all over the world from 300 KHz to 200 MHz -- including low, medium, shortwave and VHF bands.

Also improves scanner radio reception on VHF high and low bands.

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, $12.95. 3⅛x1¼x4 in.

MFJ Antenna Matcher

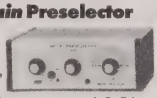
MFJ-959B **$89.95**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, $12.95.

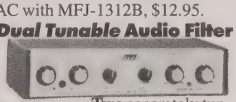
High-Gain Preselector

MFJ-1045C **$69.95**



High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312B, $12.95.

Dual Tunable Audio Filter



MFJ-752C **$99.95**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

Easy Up Antennas Book

MFJ-38 **$16.95**

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before.

Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

Receive *Color* News Photos, Weather Maps, RTTY, ASCII, Morse Code

MFJ-1214PC **$149.95**

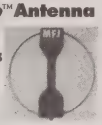
Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps with all 16 gray levels. Also RTTY, ASCII and Morse code.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Frequency manager lists over 900 FAX stations. Automatic picture capture and save.

Includes interface, easy-to-use menu driven software, cables, power supply, comprehensive manual and Jump-Start™ guide. Requires 286 or better computer with VGA monitor.

Super Hi-Q Loop™ Antenna

MFJ-1782 **$269.95**



The *Super Hi-Q Loop*™ is a professional quality remotely tuned 10-30 MHz high-Q antenna. It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

High-Q Passive Preselector

MFJ-956 **$39.95**

The MFJ-956 is a *high-Q* passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded position. 2x3x4 in.

Mobile Scanner Ant.

Cellular look-a-like. Covers 25-1300 MHz. Highest gain on 406-512 and 108-174 MHz, 19 in. Magnet mount. MFJ-1824BB has BNC/UHF plug; MFJ-1824BM has Motorola plug.

MFJ-1824BB/BM **$19.95**

MFJ 12/24 Hour LCD Clocks

MFJ-107B **$9.95**

MFJ-108B **$19.95**

MFJ-105B **$19.95**

MFJ-108B, dual clock displays 24 UTC and 12 hour local time *simultaneously*. **MFJ-107B**, single clock shows you 24 hour UTC time. *3 star rated* by *Passport to World Band Radio*!

MFJ-105B, accurate 24 hour UTC quartz *wall clock* with large 10 inch face.

MFJ Antenna Switches

MFJ-1704 **$59.95**

MFJ-1702B **$21.95**

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection device. Good to 500 MHz. 60 dB isolation at 30 MHz.

MFJ-1702B for 2 antennas.

World Band Radio Kit

MFJ-8100K **$59.95***kit*

MFJ-8100W **$79.95***wired*

Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

Free MFJ Catalog

Write or Call toll free . . . 800-647-1800

Nearest Dealer/Orders: 800-647-1800
Technical Help: 800-647-TECH(8324)

• 1 year **unconditional** guarantee • 30 day money back guarantee (less s/h) on orders from MFJ • **FREE** catalog

MFJ ENTERPRISES, INC.
Box 494, Miss. State, MS 39762
(601) 323-5869; 8-4:30 CST, Mon.-Fri.
FAX: (601) 323-6551; **Add s/h**

MFJ . . . making quality affordable

Prices and specifications subject to change © *MFJ Enterprises, Inc.*

CIRCLE 120 ON READER SERVICE CARD

POP'COMM's World Band Tuning Tips

December 1995

This *POP'COMM* feature is designed to help you hear more shortwave stations. Each month this handy, pullout guide shows you when and where to tune to hear a wide variety of local and international broadcasters on the shortwave bands.

The list includes broadcasts in languages other than English. Most of the transmissions are not beamed to North America. Keep in mind that stations make frequent changes in their broadcasting times and frequencies.

Changes in propagation conditions may make some stations difficult or impossible to receive. Your equipment and receiving location also will have a bearing on what you are able to hear.

Note: EE, FF, PP, etc., are abbreviations for English, French, Portuguese, and so on. Some frequencies may vary slightly. All times are in UTC, which is five hours ahead of Eastern Standard Time (i.e., 0000 UTC equals 7 p.m. EST)

Freq.	Station/Country	UTC	Notes
3210	R. Mozambique	0250	s/on PP
3220	Channel Africa, S. Africa	0300	
3250	R. Luz y Vida, Honduras	0100	SS
3280	La Voz del Napo, Ecuador	1000	SS
3300	R. Cultural, Guatemala	0300	
3305	R. Western, Papua New Guinea	1130	
3325	R. Maya, Guatemala	1100	SS
3330	CHU, Canada	0200	
3360	La Voz de Nahuala, Guatemala	1100	
3366	GBC, Ghana	0600	
3396	ZBC, Zimbabwe	0256	s/on
3925	R. Tampa, Japan	1000	JJ
3945	R. Vanuatu	1030	Pidgin/EE
4299	R. Naylamp, Peru	0100	SS
4549	Rdf. Tropico, Bolivia	0030	SS
4760	ELWA, Liberia	0600	
4765	R. Rural, Brazil	0230	PP
4770	R. Nigeria, Kaduna	0430	
4777	RTV Gabonaise, Gabon	0530	FF
4785	Ecos del Combeima, Colombia	0200	SS
4790	R. Atlantida, Peru	0200	SS
4795	RTV Cameroon, Douala	0430	FF
4805	R. Amazonas, Brazil	2300	PP
4830	R. Buen Pastor, Ecuador	0000	vern.
4840	R. Valera, Venezuela	0300	SS
4845	ORTM, Mauritania	0630	FF
4865	La Voz del Cinaruco, Colombia	0100	SS
4885	R. Club do Para, Brazil	0200	PP
4885	Ondas del Meta, Colombia	0300	SS
4890	NBC, Papua New Guinea	1100	EE
4890	R. France Int'l, via Gabon	0500	FF
4915	GBC, Ghana	0600	
4920	R. Quito, Ecuador	0200	SS
4930	R. Internacional, Honduras	0200	SS
4935	R. Tropical, Peru	0400	SS
4955	R. Nacional, Colombia	0400	SS
4990	R. Nigeria	0500	
5010	Escueles Radiofonicas, Ecuador	1000	SS
5025	R. Rebelde, Cuba	0100	SS
5030	AWR-Pan America, Costa Rica	0330	SS
5047	RTV Togolaise, Togo	0500	FF
5055	TIFC, Costa Rica	0400	
5075	Caracol Colombia	0300	SS
5850	Monitor Radio, USA	0500	
5860	Vatican Radio	0600	
5930	R. Prague, Czech Rep., via Slovakia	0230	
5960	R. Japan, via Canada	0100	
5965	R. Budapest, Hungary	0330	EE s/on
6000	R. Havana Cuba	0130	
6010	R. Budapest, Hungary	0230	
6015	R. Austria Int'l, via Canada	0530	
6020	R. Australia	0800	
6025	R. Amanecer, Dominican Rep.	0200	SS
6050	HCJB, Ecuador	0200	
6060	RAI, Radio Uno, Italy	0500	II
6070	CFRB/CFRX, Canada	24hr	
6095	Vatican Radio	0250	
6100	R. New Zealand	0800	
6110	Radio Japan, via Canada	0500	
6115	R. Union, Peru	0500	SS
6135	Swiss Radio Int'l	0100	
6155	SBC, Singapore	1200	
6185	Deutsche Welle, Germany, via Antigua	0500	
6195	R. Sweden	0230	
6250	R. Nacional Malabo, Eq. Guinea	0500	SS
6260	V of Greece	0130	GG/EE
7105	R. Bosnia-Hercegovina	0100	
7135	R. France Int'l	0600	FF
7160	R. Tirana, Albania	0430	
7230	R. Oman	0200	AA
7240	R. Ukraine Int'l	2200	
7250	V of Vietnam	0230	
7255	R. Nigeria	0500	
7300	R. Slovakia Int'l	0100	
7335	Vatican Radio	0130	
7345	R. Prague, Czech Rep.	0600	
7405	China Radio Int'l	1400	
7448	V of Greece	0130	
7475	RTT, Tunisia	0400	AA
7870	INBS, Iceland	1400	Ice/USB
9022	VOIRI, Iran	1930	
9200	R. Omdurman, Sudan	0250	
9380	V of Human Rights & Freedom in Iran/cland	1530	Farsi
9400	RFPI, Costa Rica	0000	
9440	R. Slovakia Int'l	0100	
9445	Voice of Turkey	2330	TT
9475	R. Cairo, Egypt	0200	
9510	R. Australia	1300	
9520	V of Vietmam, via Russia	0600	RR
9525	RRI, Jakarta, Indonesia	1100	II
9535	Swiss Radio Int'l	0500	
9540	R. Espana Exterior, Spain	0100	
9545	Deutsche Welle, Germany	0500	GG
9560	China Radio Int'l	0400	
9570	R. Portugal	0230	
9580	Africa Number One, Gabon	1900	FF
9590	R. Denmark, via Norway	1330	
9605	UAE Radio, Abu Dhabi	2300	
9625	CBC Northern Service	0330	
9640	Ecos del Torbes, Venezuela	0000	SS
9645	RAI, Italy	0130	II
9645	Faro del Caribe, Costa Rica	0500	SS
9650	Radio Canada Int'l	0400	
9675	Spanish National Radio	2200	
9675	R. Cancao Nova, Brazil	1100	PP
9690	China Radio Int'l, via Spain	0300	
9695	Channel Africa, South Africa	0500	
9700	R. Bulgaria	0000	
9710	China Radio Int'l, via Mali	0000	
9725	RAI, Italy	0100	
9735	R. Nacional, Paraguay	0100	SS
9745	HCJB, Ecuador	0730	

Freq.	Station/Country	UTC	Notes
9750	Radio Japan	1400	
9755	Radio Canada Int'l	0000	
9765	Voice of the Mediterranean, Malta	0600	
9770	V of UAE, Abu Dhabi	2300	
9805	Radio France Int'l	1200	
9820	R. Havana Cuba	0100	USB
9825	R. Kiribati	0600	
9835	R. Budapest, Hungary	0100	
9840	R. Kuwait	0500	AA
9860	Swiss R. Int'l, via Fr. Guiana	0400	
9860	R. Sweden	1100	Swedish
9870	R. Austria Int'l	0130	
9935	Voice of Greece	0130	GG/EE
9960	Wings of Hope, Lebanon	1500	
9965	KHBN, Palau	0930	
11580	KTWR, Guam	1500	
11603	Kol Israel	1900	
11620	All India Radio	1900	
11635	HRTV, Croatia	2200	
11650	R. Sweden	1200	
11670	R. France Int'l, via Fr. Guiana	0130	SS
11690	FEBC, Philippines	1200	VV
11705	R. Havana Cuba	2100	
11710	RAE, Argentina	0200	EE
11715	China R. Int'l, via Mali	0300	
11715	R. Veritas Asia, Philippines	1500	
11720	R. Bulgaria	2100	
11750	Voice of Russia	2200	
11750	R. Dniester Int'l, Moldova	2030	
11780	R. Ukraine Int'l	0030	
11785	Qatar Broadcasting Svc.	0300	AA
11790	R. Japan	0100	
11805	R. Globo, Brazil	0100	PP
11830	Vatican Radio	2250	
11830	R. Veritas Asia, Philippines	1500	
11850	Dem. V of Burma, via Norway	1430	Burmese
11865	BBC, via Canada	1400	
11870	FEBA, Seychelles	1500	
11885	UAE Radio, Abu Dhabi	2300	
11890	V of Russia	1500	
11895	R. Japan, via Fr. Guiana	0300	
11900	R. Finland Int'l	1230	
11930	VOIRI, Iran	1130	
11960	R. Havana Cuba	2200	USB
11990	R. Kuwait	1900	AA
11995	FEBC, Philippines	1330	
12005	RTV Tunisienne, Tunisia	1900	AA
12015	HCJB, Ecuador	0530	
12035	REE, Spain	0600	SS
12085	R. Damascus, Syria	2030	
13605	Golos Rossi, Russia	0230	RR
13625	R. France Int'l	1230	
13635	Swiss R. Int'l, via Fr. Guiana	0030	
13670	R. Vlaanderen Int'l, Belgium	1300	
13675	UAE Radio, Dubai	1630	
13680	V of Russia	1000	s/on, RR
13740	R. Sweden	1130	
13785	R. Pyongyang, North Korea	1500	
13805	R. Denmark, via Norway	1530	DD
13860	INBS, Iceland	2300	Icelandic
15009	V of Vietnam	1330	
15084	VOIRI, Iran	2200	Farsi
15095	R. Damascus, Syria	2030	
15120	All India Radio	1300	
15160	R. Algiers, Algeria	1800	
15170	R. Jordan	1100	
15180	V of Russia	0300	
15190	R. France Int'l	2300	SS
15235	V of Great Homeland, Libya	2000	AA
15240	R. Australia	0400	
15240	R. Sweden	1330	
15265	Radiobras, Brazil	1700	
15270	R. Jordan	1430	
15295	R. Tashkent, Uzbekistan	1330	
15315	R. Netherlands, via Bonaire	1830	
15345	RTV Morocaine, Morocco	1800	AA
15365	R. France Int'l	1230	
15370	R. Thailand	0030	
15400	R. Finland Int'l	1330	
15405	R. France Int'l	1400	
15415	R. Jamahiriya, Libya	0230	AA
15445	Radiobras, Brazil	1200	
15475	R. Atlantika, Russia	1300	RR, Tu-Fr
15475	Africa Number One, Gabon	2100	FF
15490	Swiss Radio Int'l	1500	
15530	R. Australia	1130	
15540	HCJB	0800	USB
15565	R. Australia	1200	
15570	Vatican Radio	1745	
15575	R. Korea, S. Korea	0030	
15590	Vatican Radio	1345	
15640	Kol Israel	1515	
15650	V of Greece	1400	GG/EE
15665	Monitor Radio, USA	1800	
15675	R. Copan Int'l, Honduras	2300	SS
15770	All India Radio	1200	vern
17490	HCJB, Ecuador	1000	USB
17500	RTT, Tunisia	1330	AA
17520	V of Greece	1430	GG/EE
17620	R. France Int'l	1600	
17625	R. Bulgaria	1200	
17630	Africa Number One, Gabon	1430	FF
17655	R. Ukraine Int'l	2330	
17670	Swiss Radio Int'l	1500	
17740	R. Finland Int'l	1430	
17800	Deutsche Welle	1600	
17810	R. Japan	2300	
17820	R. Canada Int'l	1300	
17825	UAE Radio	1300	
17870	RAI, Italy	1730	II
17895	Qatar Broadcasting Service	1400	AA
17900	R. Portugal	2000	PP
17905	RFPI, Costa Rica	1900	USB
21705	R. Japan, via Gabon	1600	

NEW! COPYCAT-PRO IMPROVED!

Christmas Special!!
Buy COPYCAT-PRO before Dec. 31 & receive a FREE frequency disk (3.5MB of files) A $15 value

The ONLY Commercially Available Computer Control Program for the Universal M-7000 & M-8000, AEA's PK-232 and the MFJ-1278 . . . . . JUST GOT BETTER!

STANDARD COPYCAT FEATURES

- 32K incoming text buffer
- Pull down menus
- Mouse support *(but not required)*
- 20+ programmable macros
- Runs on any 640K PC Compatible
- 50 page printed manual
- New improved online help

Note: Std. COPYCAT Does Not Support Radio Interface

NEW COPYCAT-PRO FEATURES

- Control BOTH your TNC and radio simultaneously! Send commands to TNC and at same time, send frequency and mode to radio!
- NEW! Multiple pop-up windows for HELP, frequency files, and text editor. Instantly go between any of three windows with single keystrokes.
- Supports ALL SCANCAT frequency file formats, or create your own!
- NEW, easier, "Plain English" MACRO language for control of all radio and TNC functions.
- RADIO SUPPORT for most AOR, KENWOOD, JRC, ICOM, YAESU, plus LOWE's HF-150 and Watkins Johnson's HF-1000.

Discover our revolutionary COMPUTER CONTROL PROGRAM for the M-7000 and M-8000. Let COPYCAT free you FOREVER from remembering all those buttons and keys. COPYCAT does it all! Simple "PULL-DOWN" menus control all functions. No more looking through complicated manuals or searching for buttons. ALL commands are in plain English. *PLUS* COPYCAT has a fully editable text buffer, with cut & paste. Save/load/edit/print files. PROGRAMMABLE macros and much more. COPYCAT supports ALL the above units within ONE program. Simply select your units from COPYCAT's EASY-TO-USE menu and GO!

COPYCAT-PRO $79.95,COPYCAT (std) $59.95

upgrades to COPYCAT-PRO $24.95 **S/H $5.00 ($7.50 Foreign)**

(If you don't have the specially wired cable for the M-7000/8000, be sure to order our serial adapter @ $24.95)

INTERNET WEB ADDRESS - http://www.bcrr.secret.com/scancat.html
WEB E-MAIL -scancat@bcrr.secret.com

COMPUTER AIDED TECHNOLOGIES
P.O. Box 13286 Shreveport, LA 71133
Orders Only (318) 636-1234 - FAX (318) 686-0440 (24 hrs)
Live Tech Support - (318) 687-2555 (9 a.m. - 7 p.m. Central M-F)
Intetime BBS (SCANCAT File Area) (318) 631-3662 (7 p.m. - 5 a.m. Central)
Order direct or contact your favorite dealer

Restores Horizontal and Vertical Sync Lines from Distorted Analogue Video Formats

For Free Information Package on Completed Units and Pricing

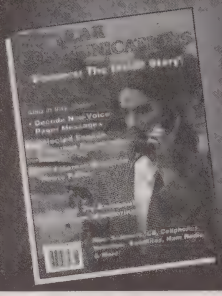
• Call Toll Free •

1-800-236-5778

R.C. Distributing • PO Box 552 • South Bend, IN 46624

CIRCLE 6 ON READER SERVICE CARD

To Order Back Issues



Only $3.50 Per Issue

When ordering back issues include the following information: Name, address, city, state & zip. Please make a list of the issues you're requesting. When paying by credit card send the number along with the expiration date. Check, Money Order, Mastercard, VISA, Discover and AMEX accepted.

Complete your collection today.

1-800-853-9797

or Fax 1-516-681-2926

Popular Communications

76 North Broadway

Hicksville, NY 11801

PAY TV AND SATELLITE DESCRAMBLING

all new information 1996 Edition VOLUME 7

Pay TV and Satellite Descrambling Volume 1-7 (all different), Satellite & DBS hacking, Wireless Cable Hacking, Compleat Wizard, Buying Surplus, Seized & Distressed Goods, Cellular Phone Hacking, Computer & Phone Hacking, all new Hacker Video. $15.95 each, any 3/$34.95 or any 5/$52.95. American Hacker Magazine $29.95 includes BBS. Our Best Deal is everything listed here and lots more for only $129.95. New product catalog $1. Add $6 for C.O. D.'s.

SCRAMBLING NEWS

3494 DELAWARE AVE., #123, BUFFALO, NY 14217-1230

Voice/FAX (716) 874-2089 BBS (716) 871-1915

dlawson@localnet.com

CIRCLE 4 ON READER SERVICE CARD

FRS rules were due in commission hands over the summer. These comments should have been directly related to the Family Radio Service as it was proposed by Tandy.

After reviewing the submitted comments, as this article is being written, it appears the Family Radio Service is very close to being approved by the commission. The FCC has stated that it believes the service would provide low-cost, dependable communications to small groups, families and associates. The communications will offer clear, dependable communications for short distances such as a few city blocks. The commission cites that the service also would be beneficial to campers, hunters and others engaged in outdoor activity. It appears that the technology is available to offer such a service. The FCC also says that it feels the creation of such a service would provide jobs and create choices for customers needing a low-cost, short-range communications medium. The FCC, therefore, "proposes to amend the rules to establish a Family Radio Service."

Closing comments on the proposed establishment of the Family Radio Service by the FCC, as requested by Tandy, were due in October. These comments are being reviewed and the FRS probably is well on its way by the time you read this. Strangely, the FCC made no mention in their remarks about Tandy's proposal relating to unlicensed access to the Travelers Aid channel.

ICOM®

THE NEXT GENERATION

For more information about ICOM's "Next Generation" radios call (206) 450-6088

ICOM America, Inc.
2380 116th Ave. N.E.
Bellevue, WA 98004.

ICOM®

© 1995 ICOM America, Inc. AM-2899. The ICOM logo is a registered trademark of ICOM, Inc.

CIRCLE 68 ON READER SERVICE CARD

HANDI-CHAT

BY TED LISLE, KD4EXK

FOR THE HANDICAPABLE COMMUNICATIONS HOBBYIST

Hello again and happy holidays. It's been an eventful year at *POP'COMM*, and we trust it has been a good one for you. I thought I'd end the year with a potpourri, beginning with a follow-up on the October report on what's new at the Federal Communications Commission. Anyone who has tried to reach the new 800 phone number on an average weekday knows it's not easy. Accordingly, Bart Jahnke, KB9NM, manager of the American Radio Relay League's volunteer examiner department, reports that the commission is placing its entire callsign database on the Internet. The full database is updated every Monday by midday, and daily updates also are available. The anonymous FTP site is: fcc.gov/pub/XFS_alphatest/amateur. Gopher users should gopher to fcc.gov, while World Wide Web browsers should address http://www.fcc.gov.

Hear About Ham Radio

While browsing through a recent talking book catalog, my attention was drawn to RC36341, *All About Ham Radio*, by Harry Helms, AA6FW. Most *POP 'COMM* readers will recognize Harry as the former author of the "You Should Know" column. *All About Ham Radio* is neither a license manual nor a study guide, although several of the latter are recommended at the beginning of the text. (For a discussion of special learning materials and other resources available to the ham or prospective ham, see "HandiChat" on page 74 in the June 1994 issue of *POP'COMM*.) There are no sample questions and answers. Instead, the book offers a thorough and useful overview for those preparing for or contemplating their first license.

The book, a 1992 publication, was recorded in March 1994, prior to recent changes such as the vanity call sign program and the official creation of the Technician Plus license (although the term is frequently used throughout the text). Yet, except for FCC rules and regulations, every area of the novice and technician exams is covered in depth. Topics include operating modes, antennas, propagation and electrical principles. Brief, but cogent treatments of relatively advanced subjects such as oscillators and RF amplifiers also are included. The technical information is interspersed with generous portions of common-sense advice, leavened with lively personal opinions, and delivered in the candid, unpretentious style so many readers have come to appreciate. In short, this one is a winner.

Yuletide Tuning

Well, like the words of an old song, "It's beginning to look (and sound) a lot like Christmas." In light of that fact, dear readers, I'd like to devote the remainder of this month's visit to personal observations and recollections. For openers, 'tis the season for holiday broadcasts ranging in quality from the sublime to the ridiculous. One of my most vivid recollections of recent years came in 1989, when the bishop of the Russian Orthodox Church delivered a special Christmas message over Radio Moscow. For me, this broadcast was—in its own quiet way—as dramatic as the fall of the Berlin Wall the previous autumn. Coming amidst the bloody upheaval in Romania, and a tense stand-off in Panama, this simple declaration of peace and hope from the former bastion of Soviet communism was a particularly poignant manifestation of the holiday spirit of renewal.

While few holiday broadcasts are liable to exert that kind of long-term impact, the airwaves are—believe it or not—full of good stuff this time of year. Most international broadcasters will be putting on special programming. Based on past experience, I particularly recommend monitoring HCJB (the "Voice of the Andes" from Quito, Ecuador), the Voice of America, the BBC and Radio Australia. (Come to think of it, these rank among my favorite broadcast services year-round.) Also, public broadcasters will be offering some of their best radio and TV programming—dramatic and musical, religious and secular, popular and classical.

Of course, when it comes to special events, we can't let the pros have all the fun. Let it never be said that amateur radio operators don't know how to celebrate. One consistently popular special event is the field broadcast, usually from a town with a special name such as Santa Claus or Bethlehem (see my December 1994 column for an example). Then there is what often is termed "Operation North Pole"—allowing kids to talk with Santa via amateur radio.

These broadcasts can take several forms. Many originate from hospitals, with local amateurs walking the pediatric wards with handhelds. And St. Nick can be anywhere within range, from the administrator's office to his own shack. One caveat; stray RF energy can play havoc in today's highly automated hospital environment, so advance permission from and careful coordination with the hospital staff are crucial. It should be stressed that these formalities are conducted annually to the complete satisfaction of all concerned.

Speaking of amateur radio recalls another favorite holiday memory. Christmas Day 1993 found me at home for the first time in more than a decade. The plan called for a good meal and a quiet family get-together. Just before midday, I turned on the radio and found 20 meters alive with strong signals. Apparently, a lot of people had found time on their special day to share a little goodwill with their fellow hams. Over the next couple of hours, I enjoyed contacts from Colorado to Ecuador, and found the relaxed fellowship characteristic of amateur radio enhanced by the special warmth of the season. I highly recommend it.

Of course the festivities don't always end when the tinsel comes down. New Year's Eve means many things to many people. For many hams, it is a synonym for "Straight-Key Night"—the one night per year when hard-core CW buffs trade their paddles, bugs and keyboards for some vintage brass. I must confess that I've never monitored one of these gatherings—most frequently found on 80 or 40 meters—but I understand that a good time is usually had by all. A prime attraction appears to be the variety and individuality of the various "fists," as well as that special feeling of getting back to basics and establishing or re-establishing a connection with the roots of the hobby. Perhaps this will be my year.

Finally, yuletide traditionally brings an influx of new hobbyists and equipment upgrades. This, in turn, presents a golden opportunity for the old-timer to lend a helping hand by answering questions, offering helpful hints or just making yourself available for some friendly conversation. This is a great hobby, full of great people. Remember, your time and attention could have a profound impact on a fledgling SWL, CBer or amateur radio operator.

Write in

Well, that ties the big red and green bow around this one, gang. Please accept our best wishes for a blessed holiday season, and be sure to join us again in 1996. Meanwhile, how about making a New Year's resolution to drop us a line here at HandiChat? Send all comments, observations or questions to HandiChat, *Popular Communications*, 76 N. Broadway, Hicksville, NY 11801-2909, or via the Internet at POPCOMM@aol.com. So long for now. ■

EMERGENCY

COMMUNICATIONS FOR SURVIVAL

BY GORDON WEST, WB6NOA

Portable GPS Tracks and Maps

The global positioning system (GPS) is now the nation's No. 1 prime location service. This billion-dollar system is maintained by the Department of Defense, and 24 orbiting satellites circling 10,000 miles above us twice a day provide position accuracies to within the radius of a 150-foot circle most of the time. Increased position accuracy could easily get down to the radius of a 5-foot circle through the use of an external second receiver tuned into differential GPS correction signals.

"One hundred and fifty-foot accuracy is close enough for us during aerial search patterns in our helicopter," comments EMT-P Bill Alber, WA6CAX. "We can create an electronic trail of our search pattern, and this way we know we are not flying over a region already covered."

For ground search parties, handheld GPS receivers with tracking capabilities allow searchers to see where they have been, and where they can double back on a search area without overlap. Although 150 feet is a relatively large margin for error, a search for lost hikers that might respond to you calling out for them could be conducted give or take that error span.

What causes the 150-foot error? The principal reason is "selective availability" by the Department of Defense—we have been selected not to be available for the more precise P-Code reception. Our C/A-code receivers, tuning in signals at 1575 MHz, are purposely "dithered" in the proper reception of satellite time, leading to 150-foot errors average, zero errors sometimes, and an extreme of 295-foot errors worst case for short periods of time.

Department of Defense-induced errors protect our national security against a pinpoint incoming hostile missile attack.

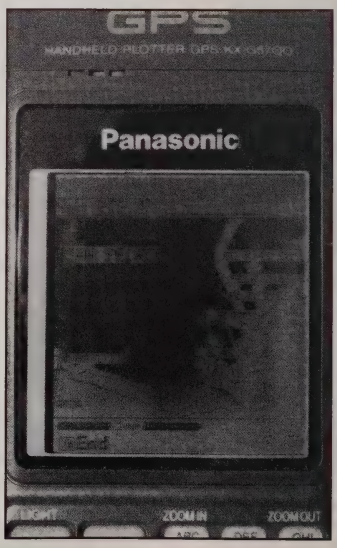
Searching a field of deep snow for an avalanche victim is possible with a portable GPS receiver tied into a differential correction secondary receiver. During summer months, lifeguards can pick up correction signals free of charge from U.S. Coast Guard low-frequency transmitter stations along the coastlines and major rivers. But inland areas may require their own differential correction system, or subscription to differential correction signals that ride along the subcarriers of specific FM broadcast stations. Differential decoders that easily plug into most handheld and mobile GPS sets are available from Differential Corrections Inc., Cupertino, Calif.; (800) 446-0015.

Differential corrections are based on an algorithm of incoming GPS satellite signals, a comparison to a known benchmark in your area, and a differential radio transmission of the correction so your little portable or mobile GPS receiver now decodes accuracy down to sub-meter levels.

Even without differential corrections, portable GPS receivers are an excellent way to conduct a search pattern. The relatively inexpensive marine GPS sets, seen selling for about $300 new, have plot capabilities that electronically draw a track of your search pattern. You would designate your starting point as "Waypoint 1," and then conduct your search pattern while watching the screen. As you search back and forth, your portable GPS will show a back-and-forth pattern. After a few hours of searching, your screen will begin to look like a grid of criss-cross traces. You'll even be able to spot areas where you couldn't get into search by their void on the screen.

"We run a Garmin 45 and Magellan 5000DX for our search patterns. The electronic trails are very helpful to ensure we don't search a certain area twice, or we don't overlook an area that we thought we had searched before," comments Rick Graves, an emergency medical technician for Medical Safety Management Inc. "We make our command post the first waypoint, so we know our searchers always can return to home base by observing range and bear-

Author West tests two portable GPS map units aboard a harbor patrol boat.



These GPS map units are displaying electronic charts.

Tracking your route can be helpful when conducting a search pattern.

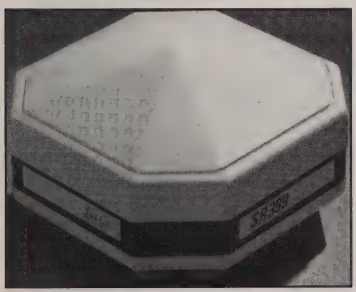
ing calculations that each GPS set can do."

Electronic maps on cartridges are the latest improvement to the portable GPS plotters. Two companies now offer electronic charts for GPS sets at less than $1,000: Panasonic Inc., Secaucus, N.J., (201) 392-4222; or Raytheon Marine, Hudson, N.H., (603) 647-7530.

These portable GPS receivers, with built-in latitude and longitude readouts, plus plotting and cartography capabilities, are waterproof for river rescues or heavy weather use. Both sets run on AA batteries, and will run continuously for about eight hours. They also are back-lit for night use.

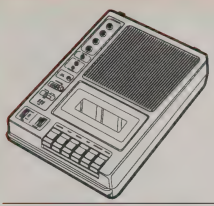
GPS readouts also can be tied into an automatic position reporting system (APRS) in which your actual latitude and longitude is sent out as an electronic packet over ham or commercial frequencies. A terminal node controller (TNC) at the other end of the circuit displays your position on a portable color laptop computer screen.

For extended rescues, the AEA (Lynnwood, Wash.) PK-12 is a nice addition to your GPS system. Find a local amateur operator who may be part of your rescue squad and get them to tie in ham communications for automatic positioning reports.



A medium frequency differential receiver preamplifier is built into the H-plane antenna unit, yielding sub-meter accuracy.

PROFESSIONAL 10 HOUR RECORDER. Built like a BATTLESHIP



* Special *Pop'Comm* price $149
* Heavy Duty commercial recorder (NOT "improvised" from a consumer model)
* Full one year warranty * Dimensions 11.5 x 7 x 2.75"
* BUILT-IN voice activation: add $25
* Also available: 12, 14 and 16 hour models
* Recorders come with full applications info for scanners, etc.

FREE 32 Page Special Equipment Catalog

VIKING INTERNATIONAL *SINCE 1971*
150 EXECUTIVE PARK BLVD. #4600
SAN FRANCISCO, CA 94134
PHONE: (415) 468-2066 FAX: (415) 468-2067

No shipping charges on prepaid orders. COD's OK. Cal. residents add tax.
Sorry, no credit cards (all they "do" is increase prices---)

CIRCLE 88 ON READER SERVICE CARD

World's Most Powerful CB and Amateur Mobile Antenna*

Lockheed Corp. Test Shows *Wilson 1000* CB Antenna Has 58% More Gain Than The K40 Antenna (on channel 40).

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

***Lockheed** - California Company*
A Division of Lockheed Corporation
Burbank, California 91520

Aug. 21, 1987

Wilson Antenna Company Inc.
3 Sunset Way Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below.

FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

58% MORE POWER GAIN THAN THE K40

Individual test results may vary upon actual use.

Guaranteed To Transmit and Receive Farther Than Any Other Mobile CB Antenna or Your Money Back**

New Design

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

*Inductively base loaded antennas
**Call for details.

CALL TODAY
TOLL FREE: 1-800-541-6116
FOR YOUR NEAREST DEALER
Wilson 1000
DEALERS Exclusive dealer areas still open

Roof Top Mount.....59.95
Trunk Lip Mount.....69.95
Magnetic Mount 79.95
500 Magnetic Mount .59.95
Little Wil.....29.95
Wilson 2000 Trucker .59.95
Wilson 5000 Trucker .79.95

Wilson
ANTENNA INC.
1181 GRIER DR., STE . A
LAS VEGAS, NV 89119

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

Make a list and check it twice, better find out who's naughty and nice. That's our advice. Complaints continue to arrive from people who find their cellphone number has been illegally cloned. Some stranger's phone has been programmed with their ripped-off number, and that person is placing fraudulent calls all over the world.

The combination of advanced technology and increasingly clever crooks has made cloning a breeze. This puts cellphone users on notice that they are at risk of being (what I call) *celljacked*.

Know who cloners love best? The complacent person who does nothing to protect his or her number, figuring the odds are that crooks will rip off some other hapless soul. Don't play this game. Sit the hand out. It's a stacked deck, you can't win. Yet, by taking only a few simple defensive precautions, it's possible to make it very difficult for your cellphone number to be stolen.

Let's run out a quick list of things that can be done to stop your cellular phone number from being electronically swiped. Here's your Cellular Security Shopping List:

1. *Switch Off*: It's best to turn the cellphone's power off around toll booths and plazas, around bridge and tunnel approaches, or at rest stops along major highways. Anywhere there's a lot of traffic stopped or moving at a slow pace, particularly in a metropolitan area, is a spot to switch off the power. These are the favorite haunts of number thieves. You do not even need to be using the phone for them to determine your cellphone number. Unless your cellphone has security programming they can do it any time the phone's power is turned on, even in stand-by.

2. *Hear a PIN Drop*: Some cellphone service suppliers require or permit subscribers to utilize a PIN (Personal Identification Number) in order to process calls. This is a good feature.

3. *Locks of Luck*: If your cellphone has a keyboard lock, you want to activate it so that your own phone can't be used by others to make outgoing calls. Perhaps you have a way of locking down the handset of your carphone or placing it in the trunk (maybe along with the antenna) when you park the vehicle, or leave it with a parking lot attendant.

4. *Close to the Vest*: If you normally place calls only to numbers in North America, why do you need the ability to call overseas? Advise your cellular carrier to lock out overseas dialing on your account stating that you neither make nor receive toll calls from outside of North America. You might wish to do this in writing.

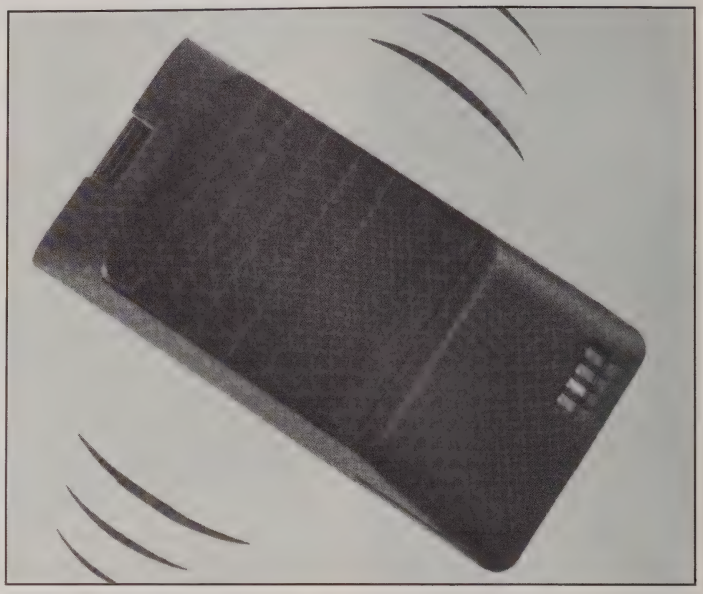
5. *A Matter of Record*: Be meticulous about your records and documentation. Maintain a file containing your cellphone's bill of sale, the serial numbers relating to your phone, the agreement you signed with the service carrier, all of your bills, etc.

6. *The Eyes Have It*: Your cellular company may already provide you with a fully itemized monthly bill showing each call made from your cellphone. If you don't get itemized billing, ask about it (may be a slight monthly fee, but it's worthwhile). Check over the bills every month to make certain all calls either match up with your log, or else are numbers known to you.

7. *Don't Get Hung Up*: It's time to begin getting nervous with the service when you start getting frequent calls on your cellphone from folks who hang up when they hear you. Also, be concerned about callers who ask for someone you never heard of, or are speaking in languages you don't understand.

8. *Give a Little Whistle*: If you have reason to question the calls shown on your bill, or have any suspicion that your number was stolen, quickly contact your service carrier to make them aware of the situation. Also, let them know should you lose your phone, or if it is stolen.

These things are easy to do. You're cautious enough to lock the door to protect your home, aren't you? Everyone who has received a half-inch thick cellphone bill showing thousands of dollars worth of fraudulent calls should have exercised basic cautions. It's annoying to straighten out the mess, and inconvenient to start all over with a changed number.



Shake, rattle and roll. The ORA VibraRing ends problems with some cellphones sounding at inappropriate moments.

Reselling Cellular

As has been explained previously, the cellular industry in the U.S. has been established with each designated service area permitted by the FCC to have two licensees. One is the local landline telephone company, and is known as the *wireline* carrier. The other one is called the *non-wireline* carrier.

Less known by the consumer are cellular resellers. Resellers are wholesalers who buy cellular service (air time and facilities access) in bulk at a discount, and then resell it to the public under their own individual company names. Reselling is growing into a thriving business unto itself, and not one which exists in great harmony with the cellular licensees.

Resellers, which usually are small independent companies, compete against one another and the large and powerful carriers for subscribers. Some states have laws that resellers claim restrict their ability to reasonably compete against the carriers. For instance, resellers often are required to

▲ *Antennas on the roof of Relay Communications include 72 MHz links. (Photo by R.G.L., N.Y.)*

◄ *Headquarters of Relay Communications, Riverhead, N.Y. This is a voice paging company that operates on 152.09 MHz and covers a wide area. (Photo by R.G.L., N.Y.)*

utilize all of the facilities and resell all of the services of the carrier they are dealing with.

Resellers claim that in order to compete effectively against the carriers, they must be able to provide their own switch-based interconnection, then purchase only those services needed. This is a practice called *unbundling*, in which resellers are charged separately for each wholesale service.

If services are unbundled, resellers claim, only those services that are needed would be paid for. They may not even wish to offer some of the host carrier's deluxe services. If freed from such costs, resellers could lower rates to consumers and better compete with the larger carriers.

Carriers have enjoyed the luxury of a federally assured duopoly. Two local licenses and no more to be issued is a poor joke played on the naive public. It's a classic sweetheart deal. One suspects carriers don't relish competition from a pack of aggressive independent resellers.

In California, cellular rates are among the highest in the nation. A year ago, the state's Public Utilities Commission ordered the dominant cellular carriers to provide switch-based resellers with unbundled wholesale rates. Carriers simply ignored the PUC order. Little wonder! Compliance would have allowed resellers to reduce their rates by 15 to 20 percent.

California State Sen. Newton Russell, of Glendale, introduced Senate Bill 1090 to ensure that carriers comply with the PUC order. Last July, Russell's bill fell two votes short of passage in the Assembly Utilities and Commerce Committee. It will be reconsidered in January. Earlier, the state Senate had approved the measure by unanimous vote. Nationally, watch for resellers to continue becoming a force to be reckoned with. Cellular carriers might use their resources and clout to resist. Remember how they got the ECPA rubberstamped into law? We will be watching this situation as it plays itself out.

The resellers industry group is the Cellular Resellers Association, 3928 Point Eden Way, Hayward, CA 94545. Phone: (510) 732-1100.

Here's a Good Idea

ORA Electronics came up with VibraRing. It's a unique rechargeable battery for Motorola Micro TAC Series (Model VRB-P5B) portable cellphones. What makes it different is that the thing vibrates.

That means your portable cellphone now can now let you receive calls silently without the annoying ring. Imagine going somewhere and having the thing start howling just at the worst possible moment. Judge Lance Ito banned cellulars from the Simpson trial courtroom so they wouldn't ring during testimony. Did you see Rosie O'Donnell's HBO special when some guy in the audience had his cellphone go off? Ho, boy! Rosie made light of it, but I thought she wanted to skewer him with its antenna.

With this gizmo in place, the portable doesn't make any sound. It will vibrate, like a beeper, alerting the user to an incoming call. You can smuggle the cellphone into a restaurant, theater, courtroom, concert, church, or meeting, and you will be the only one who knows it's with you. When a call comes in, it can be dealt with by stepping into a hallway or other anteroom where others won't be disturbed.

VibraRing features a powerful, built-in vibrating motor. The rechargeable battery conveniently attaches to the cellphone the same way you attach the phone's batteries. It can be used with quick charge or standard charge units, and sells for about $100.

For more information, contact ORA Electronics, P.O. Box 4029, Chatsworth, CA 91313. Phone (818) 772-2700.

Photo Opportunity

A few issues back, we received several interesting photos of the cellular service station in Edmonton, Alberta, Canada. These were submitted by Trevor Fletcher, one of our regular correspondents. This month, we can show you a major radio paging station, thanks to photos received from reader R.G.L. of Quogue, N.Y.

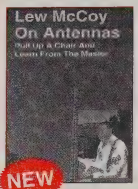
These make it a good time to remind all our readers that we would like to present more photos of cellular, paging, marine operator, and other similar personal communications facilities used to serve the public. Why not shoot some photos of facilities in your area, then send them to this column so we can give others a peek?

No more until next month, but here's my wish for a happy holiday season. Please send us photos, news releases, news items, opinions, questions and comments relating to cellulars, beepers, PCS, air/ground phones, marine ship/shore, as well as related new products and services.

When writing, please indicate in the address "Telephones Enroute Column," to ensure speediest delivery of your material. Thanks! ■

CQ BOOK &

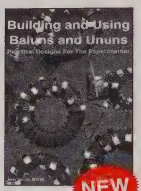
McCoy on Antennas



CQ magazine author and acclaimed authority on antenna theory and design, Lew McCoy, W1ICP, has written a truly unique antenna book that's a must for every amateur. Unlike many technical publications, Lew presents his invaluable information in a casual, non-intimidating way. **Lew McCoy on Antennas**—It's not just an antenna handbook, but a wealth of practical antenna advice for the ham!

Order No. MCCOY.....$15.95

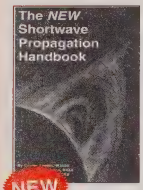
Building and Using Baluns and Ununs



Written by world-renowned expert Jerry Sevick, W2FMI, this volume is the definitive source for his latest practical information and designs on transmission line transformer theory. W2FMI has unraveled the technological mysteries with designs that are simple and work. Discover new applications for dipoles, yagis, log periodics, beverages, antenna tuners, and countless other examples.

Order No. BALUN.....$19.95

The NEW Shortwave Propagation Handbook



The most comprehensive source of information on HF propagation is available from CQ! We've built an award-winning team, gathering information from individuals and organizations around the world. Collectively, co-authors George Jacobs, W3ASK, Ted Cohen, N4XX, and Robert Rose, K6GKU, have devoted much of their professional and amateur careers to advancing ionospheric science. Propagation principles, sunspots, ionospheric predictions, photography, charts and tables galore—it's all in this unique reference volume!

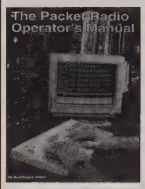
Order No. SWP....$19.95

The Quad Antenna

Hams love antenna books. Written by noted author Bob Haviland, W4MB, **The Quad Antenna** is the authoritative technical book on the design, construction, characteristics and applications of quad antennas. Discover how to easily build a quad antenna for your station that will help you fill your logbook with rare DX that you've only dreamed about before.

Order No. QUAD..... $15.95

The Packet Radio Operator's Manual



This book is written by CQ columnist and Amateur Radio Packet authority Buck Rogers, K4ABT. An excellent introduction and guide to packet operation, it is the perfect single source, whether you're an advanced user or just starting out. Learn about packet radio without all the technical jargon. This book is the definitive resource for the active packet user.

Order No. PROM..... $15.95

CQ Buyer's Guides

Dealers • Manufacturers • Product Specs • Feature Articles • Equipment Prices

1995 Beginner's Guide to Amateur Radio

Whether you're a Novice, Technician or just beginning to think about getting your license, CQ's Beginner's Guide is the perfect addition to your shack. In addition to practical articles on HF, DXing, building your first station, QSLing, and more, you'll also find our famous dealer and manufacturer's listings!

Order No. 95BBG....$5.95

1995 Equipment Buyer's Guide

Learn from the experts about the latest features in HF/VHF gear, choosing the best antennas and reaching the top of amateur licensing. Our 1996 Equipment Buyer's Guide is a package of solid information including the latest in amateur dealers and manufacturers. Discover why this year's edition is the best yet!

Order No. 96EBG....$5.95

CQ's Buyer's Guides are the single source for information on what equipment is available, features and functions, and where to buy it!

We carry all ARRL products

Now Available Direct From CQ!

Title	Order No.	Price
ARRL Antenna Book	ARRLAB	$30
ARRL Handbook (1996 Ed. w/software)	ARRLHB	$38
ARRL Operating Manual (New Edition)	ARRLOM	$22
ARRL Repeater Directory ('95-'96)	ARRLRD	$7
ARRL Antenna Compendium Vol. 1	ARRANT1	$10
ARRL Antenna Compendium Vol. 2	ARRANT2	$12
ARRL Antenna Compendium Vol. 3	ARRANT3	$14
ARRL Antenna Compendium Vol. 4	ARRANT4	$20
ARRL Weather Satellite Handbook	ARSAT	$20
ARRL FCC Rule Book	ARFCC	$9
ARRL World Map	ARMAP	$12

Title	Order No.	Price
ON4UN Antennas and Techniques for Low Band DXing	LOWDX	$20
1996 NA Callbook	NACB	$35
1996 Int'l Callbook	INTCB	$35
1996 Callbook Pair	NAICB	$65
1996 Callbook on CD-ROM (New)	CBCD	$49
Gordon West No-Code Technician Plus License Manual	GWTM	$10
Gordon West General License Manual	GWGM	$10
Gordon West Extra License Manual	GWEM	$10

VIDEO LIBRARY

Keys, Keys, Keys

Enjoy nostalgia with this visual celebration of amateur radio's favorite accessory written by CQ's Dave Ingram, K4TWJ.

Order No. KEYS.....$9.95

The VHF "How-To" Book

This book is the perfect operating guide for the new and experienced VHF enthusiast as only Joe Lynch, N6CL, can describe.

Order No. BVHF.....$15.95

Ham Radio Horizons: The Book

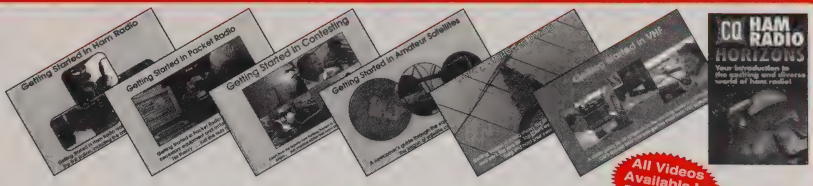
This is an excellent book for the beginner or for use in your club's licensing classes. HRH, by Peter O'Dell, WB2D, is full of information about all phases of ham radio and how to get started.

Order No. BHOR.....$12.95

The Vertical Antenna Handbook

Take advantage of the 20 years of research and practical experience of naval communications engineer Capt. Paul H. Lee, USN(ret), N6PL. Learn basic theory, design, and practice of the vertical antenna. Discover easy construction projects such as a four-band DX vertical or a broadband array for 80 meters. Paul Lee can get you started today!

Order No. VAH..... $9.95


Getting Started in Ham Radio
Getting Started in Packet Radio
Getting Started in Contesting
Getting Started in Amateur Satellites
CQ HAM RADIO HORIZONS

All Videos Available In PAL format

Getting Started in Ham Radio

This is a fast-paced video introduction to the fascinating world of ham radio. CQ's experts show how to select equipment and antennas; which bands to use; how to use repeater stations for improved VHF coverage; the importance of grounding and the basics of soldering. Get the most out of your station, whether it's home-based, mobile or hand-held.

Order No. VHR $19.95

Getting Started in Packet Radio

This video will help de-mystify the exciting but sometimes confusing world of packet radio. Learn how to get started using your computer on the radio. Included are step-by-step instructions on making packet contacts and using packet bulletin boards, networks and satellites.

Order No. VPAC.. $19.95

Getting Started in Contesting

For the newcomer to contesting or an experienced veteran, this video is for you! You'll get advice and operating tips from some of contesting's most successful competitors, including Ken Wolff, K1EA, Dick Newell, AK1A, and CQ's own contest columnist, John Dorr, K1AR. Here's just a sample of what you'll see: what contesting's all about, explaining contest jargon, tips for beginners, how to compete from a small station, operating secrets from the "pros", live QSOs from world-class stations, and VHF/UHF contesting.

Order No. VCON $19.95

Getting Started in Amateur Satellites

Learn with this video how veteran operators set up their satellite stations. Find out how to locate and track ham satellites with ease. Watch as operators access current satellites and contact far ranging countries around the world. This video is filled with easy to understand advice and tips that can't be found anywhere else.

Order No. VSAT..... $19.95

Getting Started in DXing

Top DXers share their experience with equipment, antennas, operating skills, and QSLing. You'll see hams work rare DX around the world. If you're new to DXing, this video is for you! All this valuable information may well give you the competitive edge you need to master the world of DXing.

Order No. VDX..... $19.95

Getting Started in VHF

This is the ideal introduction to VHF. See demonstrations of the latest radios. Also, learn about repeater usage as well as the more exotic VHF operating modes. Whether you are interested in packet radio, satellite operation, or simply using your local repeater, this is your video!

Order No. VVHF....$19.95

Ham Radio Horizons: The Video

This introduction to Amateur Radio is an excellent complement to the Ham Radio Horizons book. Enjoy seeing all aspects of ham radio ranging from what it takes (and costs) to get started to how you can get your ham license. HRH is ideal for public events, presentations to community groups and as an opening to your club's licensing courses!

Order No. VHOR.....$19.95

Order Toll-Free 1-800-853-9797

YES! I want to learn from the experts. Rush me my book(s), video(s), buyer's guide(s) right away!

Please add $4 shipping & handling. **FREE shipping & handling for orders $50 and over.**

Please make your check or money order payable to: CQ Communications, Inc.

Qty	Item #	Description	Price	Total Price
			Shipping/Handling	
			NY State Residents add applicable sales tax. Total	

Name _____ Callsign _____

Address _____

City _____ State _____ Zip _____

MC/VISA/AMEX/Discover # _____ Expires _____

Form of payment: ☐ MC ☐ VISA ☐ AMEX ☐ Discover ☐ Check ☐ Money Order

Please mail your orders to: CQ Communications, Inc., 76 North Broadway, Hicksville, New York 11801-9962 FAX 516-681-2926

CB SCENE

BY JOCK ELLIOTT, SSB-734

27 MHz COMMUNICATIONS ACTIVITIES

If you've been wondering what to get that special CBer for the holidays, or perhaps looking for something to put on your own list for Santa, I've got a few suggestions.

The first is a slick new 40-channel handitalkie from Cobra, the HH-35WX. This battery-powered unit measures 8 inches high, 3-1/2 inches wide, and 2-1/4 inches deep, excluding its rubber-ducky antenna. It weights 1 pound, 7 ounces with batteries installed and transmits a full four watts. To save batteries when full power is not needed, a low-power switch reduces output to one watt.

There's a green LED channel display that's easy to read under almost any light condition, plus a special battery-saver circuit that turns off the display when it's not in use. Squelch out the noise, and the display turns off, but it automatically comes back on when you transmit or when a received signal breaks the squelch. Next to the channel display are three red LEDs: one to indicate transmit, one that lights when the batteries need recharging, and another that lights when recharge is under way.

Near the bottom of the HH-35WX on the side is an AC charger jack that allows recharging batteries without removing them from the radio. Another jack accepts a 5-foot power cord with fused cigarette lighter plug (included with the radio), so this rig can run off your car, RV or boat battery.

On the other side of this handheld is a switch for selecting between CB reception or any of three primary NOAA weather channels for instantaneous reception of weather information.

Now, if I were considering the purchase of any emergency CB for someone, the HH-35WX would be one of the top candidates. It offers full legal output, weather channel reception and the ability to operate off its own internal batteries—which is a plus if the battery in your car dies. The antenna connector on the HH-35WX is BNC, so an adaptor will be needed if you want to hook this radio up to the PL-259 connector found on most mobile CB antennas. Suggested retail price of the HH-35-WX is $109.95, but chances are it will be available for less from discounters.

New Base Station

On the other hand, Cobra has designed a CB base station that the company says is "targeted to teens, young adults and first-time CB users." The news release announcing this new radio goes on to say that Cobra believes continued strong growth for CB radios will be fueled by non-traditional CB buyers like young adults, who want many of the benefits of cellular phones without the high monthly cost. This is an intriguing idea, and it should be interesting to see if it happens.

But back to the new radio—one look at the 93LTD-WX CB base station and you can see that it's different. It's basically a flattened, horizontal design that looks very simple in its layout, yet the goodies that most CBers need are right there: automatic noise limiter, RF gain control, squelch, instant Channel 9.

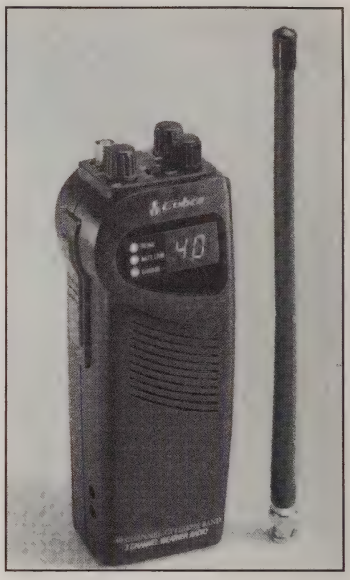
Even better, this radio includes seven NOAA weather channels, plus Weather Alert, which means a tone will sound when NOAA transmits one of its emergency weather bulletins. In addition, this rig will run off AC or DC power, so it has the flexibility to operate at home or in RVs or campers. Suggested retail price of the 93LTD-WX is $179.95, but it should cost less from discounters. I hope to get a hands-on look at one in the future.

K40 Donates to REACT

K40 Electronics, a manufacturer of CB radios and antennas, recently donated 50 K40 CB radios and 50 K30 antennas to REACT. REACT distributed the radios and antennas to REACT teams that had the most hours monitored in the past year, in proportion to their group size.

REACT, (Radio Emergency Associated Communications Teams) is a non-profit organization based in Wichita, Kan., consisting of 550 teams located in the U.S. and abroad. According to REACT, its teams handled about 90,000 incidents involving emergency or assistance communications last year. About 85 percent of the radio traffic was via CB radio.

For additional information about RE-



The Cobra HH-35WX includess 40 CB channels as well as three NOAA weather channels.

Cobra's new 93 LTD-WX is aimed at newcomers to CBing.

ACT, phone (316) 263-2100, fax (316) 263-2118, or write REACT International, P.O. Box 998, Wichita, KS 67201. For additional information about K40 radios and antennas, write to K40 Electronics, 1500 Executive Drive, Elgin, IL 60123.

From the Mailbag

Don Hallenbeck, SSB-1556-B, wrote from Pittsfield, Maine, with a clipping on the use of CB in a neighborhood watch program. Using mainly old 23-channel CBs, members cruise the town, alerting police to suspected criminal activity or other things that might be amiss. Information is funneled into a base station in a room just off the police department, but contact with the police is made only by telephone, even though they are in the same building.

Although the program has just gotten off the ground, instances including intoxicated pedestrians, possible domestic violence, motorists needing help, suspicious persons and vehicles and public disturbances have been reported. Thanks for the report, Don; it's good to see CB being put to a useful purpose!

Brett Mellor of Saugus, Mass., sent a nice note with photocopies from the owners manual of his Tram D201. It certainly is a gorgeous radio. Even worse, Brett goes on to tell me he picked his up at a yard sale for $40! He has been told that this radio sold for around $900 back in 1971. Now that's serious money, and back then, it was *very* serious money. In 1969, I bought a brand new car for about twice that amount. Gee, Brett, you really know how to make a guy green with envy.

Kurt Schweizer, P.O. Box 332, North Boston, NY 14110-0332, would like to hear from other CBers. He enclosed one of his QSL cards so it could be published.

Douglas Stingley wrote from Salem, Ore., enclosing a copy of *Wheels Alive*, a publication of the Association of Christian Truckers. A while back I reported that a Christian ministry had laid claim to Channel 12 nationally as a Christian alternative CB channel. Now the folks at *Wheels Alive* have written an editorial that appears to oppose the Channel 12 idea—saying Christians should "occupy" Channel 19 until Jesus comes again.

I'm in no position to tell anyone what to do with their faith life, and I certainly have no objection to anyone sharing their faith over CB radio. But I will offer the following observation: Folks around the Capital District of New York state have been holding a regular Christian network on Channel 35, and they take a huge amount of abuse from other CBers who apparently object to the idea. As a result, I think the objections on Channel 19 might be even more vehement.

Nevertheless, the FCC rules clearly state that all channels are available to everyone for all legal types of communications. The bottom line: The only sensible solution is for all of us to choose to get along with each other—Christians and non-Christians, truckers and non-truckers alike.

Finally, let me extend my best wishes for this season. I hope these holidays find you and your family safe and well. And I hope that all CBers extend to each other peace on earth, and goodwill toward all men.

Until the next time, I look forward to your cards and letters. Please write to me here at *Popular Communications*. ■

The Best*
Just Got Better!

The Eavesdroppers™ now includes our new Zap Trapper™ Electronic Gas Tube Lightning Arrestors. Receive-only design shunts damaging transients to ground at only 1/7th the voltage buildup of the available 200 watt transmit-type arrestors, providing maximum solid state receiver protection.

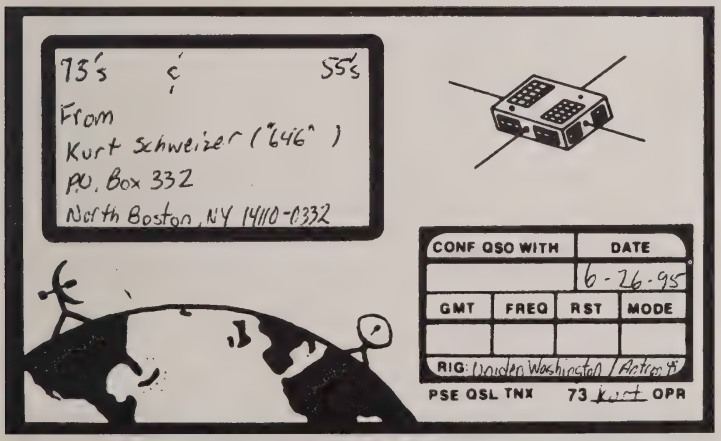
Protect your investment - combine an excellent shortwave receiving antenna with the best receiver protection money can buy.

- Completely assembled and ready to use
- Only 42' overall length
- 8 trap circuits permit reception on all shortwave bands, 11-90 meters.
- All connections soldered and enclosed in ultrasonically-welded, hermetically-sealed trap covers
- Includes 50' of 450 lb. test nylon rope

Model T includes 100' twinlead feedline
Model C includes weatherproofed center connector for your coax & coax sealant
- Either model $79.95
- UPS for lower 48 states $5.00
- COD add $4.50, IL add 7% sales tax
- Foreign shipping quoted

- *"The best...built like an antenna should be."*–Larry Magne in *World Radio TV Handbook*
- *"Our best seller."* –EEB in their recent ads and catalogs
- *" Now in use in 45 countries."* –Gilfer Shortwave in 1983

Antenna Supermarket
P.O. Box 563 Palatine, IL 60078 Tel (708) 359-7092 Fax (708) 359-8161
At your dealer or direct • Visa & Mastercard accepted



Kurt Schweizer sent in this interesting QSL card.

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Douglas Stingley, OR, reports he is hearing a RTTY signal in the early evening on 27045 kHz. The signal, varying between moderately weak to moderately strong, occurs on a frequency allocated for radio control, and is located between CB Channels 7 and 8. Douglas says he is interested in learning if anyone has noted this RTTY signal and whether it is causing QRM to either radio control operations or CBers.

Tracy Petrik, AZ, is experiencing a problem when tuning signals for decoding with his AEA FAXII. If anyone has this equipment and can offer some assistance, please write him at 3033 W. Tonopah Drive, Phoenix, AZ 85207.

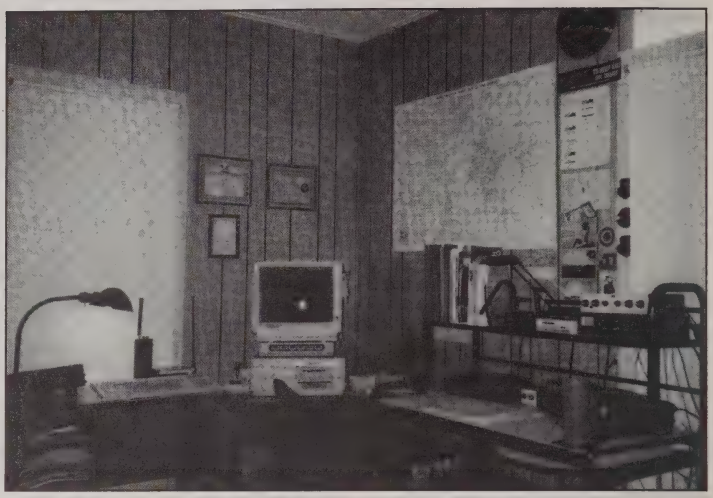
William Hassig, IL, sent an article from the *Chicago Sun-Times* that described the efforts of Paul Masching in locating a door that came off a plane in flight. I am sure that you will recognize the error made by the reporter when she said, "Masching can pick up the location of the beacons that identify a five-mile path to each of O'Hare's runways on certain ham radio frequencies. The signal led him right to the door." The flight was American Eagle 4127, which took off from O'Hare International Airport in Chicago around 9 p.m. one night. Shortly after take-off, the rear passenger door came off the airplane. A flight attendant was almost sucked through the hole.

For those readers who are able to copy Morse code, here is the chuckle of the day, taken from the February issue of the Eighth Air Force News: "One night some of us were in a pub near Hestson when a real knockout of a British Air Force girl walked in. Seeing her, several of our radiomen who had a habit of tapping out messages on the table with a spoon started tapping away in code some rather graphic descriptions of her various charms. After a few minutes the young lady also picked up a spoon and began tapping away. Suddenly my buddies stopped tapping, turned red in the face and hurried out of the pub. Later when I asked why they left, they replied that she called them every kind of dirty word they had ever heard, and then started on some that were new to them—and boy could she send!"

Can anyone help reader Al Marote, FL? He asked for the QSL address for Schooner Roseway, WTC6542.

Jan Bergsten, Sweden, advises there is a very active blockade net off Yugoslavia on 7903 kHz and it is active 24 hours a day. MS is control (probably French) and is in charge of the force. There is a lot of traffic in identifying ships and orders for civilian ships to change course. Many different callsigns of different nationalities are heard.

Some items of interest from the Spring 1995 issue of the *National Travelers Information Radio Exchange News* include:



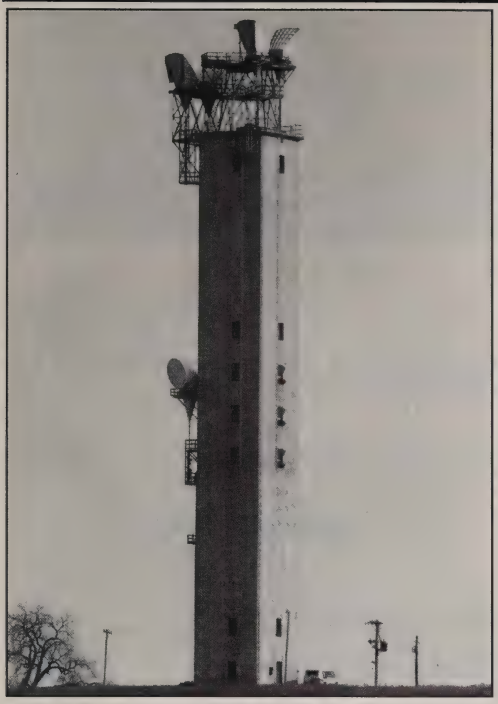
Equipment position of Tom Sevart of Kansas. He uses monitoring ID KKS0CE and ham call N2UHC.

1) An offshore broadcaster operating on 535 kHz is not tuned properly and is causing QRM to traffic information and highway advisory radio stations on 530 kHz as far away as Connecticut. The offending broadcaster has been made aware of the problem and reportedly is taking steps to rectify the problem.

2) The Caribbean Beacon, a broadcast station operating on 1610 kHz from Antigua, British West Indies, is planning to increase its power from 50 kW to 200 kW.

	6485	6959	7337	9251	11545	12603	13375	14487	15682	16084
1000									X	
1100									X	X
1200									X	X
1300									X	
1400								X	X	
1500					X	X	X			X
1600					X	X	X			
1700					X	X	X			
1800	X		X							
1900		X		X						
2000		X								
2100		X								
2200		X								
2300										

"Lincolnshire Poacher" frequencies and schedules. Chart based on data from Ary Boender, Netherlands.



United States Air Force
RESCUE 852

To: Radio AA4JN
This confirms your reception of HF, USB radio transmissions as indicated below:

Date: 14 Jul 94 Time: 2145 Z Frequency: 8984 kHz
A/C Home Base: PATRICK AFB, FLORIDA
A/C Type: HC-130P "HERCULES"
Approx. Location: 80 miles SOUTHWEST OF BERMUDA
Remarks: Search mission for 18' BIMINI boat. Boat was found later that night. Comm operator Senior Airman Mike Trim. 73s, WHGANX
Signature
CHIEF CREW 3 PATRICK

With the return of his PFC, Jim Navary of Virginia received the accompanying note.

The distinctive AT&T tower stands in Tampico, Ill. (Photo by Terry Michaels of Wisconsin)

At its present 50 kW, the station has caused QRM to U.S. travelers information stations.

3) Some great DX was reported by a member of the International Radio Club in Seaside, Ore. The member reported picking up the TIS broadcast from Jack Murphy Stadium in San Diego, Calif.—a respectable distance of 950 miles. Another club member in Sacramento monitored WPAM217 at 0530 local time; the station is operated by Lyondell Petrochemical Co., Channelview, Texas, a distance of 1,600 miles. (Note that both signals were quiet, expanded AM band frequencies, 1700 and 1620 kHz respectively.)

Rick Baker, OH, reports that he caught this notice transmitted by KFS this past summer:

HELLO ALL STATIONS
THIS IS THE GLOBE WIRELESS NETWORK
ANNOUNCING: STATION KEJ, THE NEWEST STATION ON THE GLOBE WIRELESS NETWORK, IS ON THE AIR. QTH HAWAII. ITU CHANNEL PAIRS 407/625/830/1265/1673, SELCAL 1094 4, 6, 8 FULLY OPERATIONAL, 12/16 MHZ QRP. TFC LIST H 15 YOUR SIGNAL REPORTS ARE WELCOME.

Tom Sevart, KS, has discovered a station sending CW non-stop at 0410 UTC on 4275 kHz. It is sending numbers, BTs, ARs, colons and closed parenthesis. It still was going non-stop at 0600.

An item from NewsFact indicates Norway will install the world's most advanced coastal radio system, a DSC-based Garex 220 (see photo), during 1995 and 1996:

"Eight coastal radio stations along the Norwegian coastline will be integrated into a single network so that they can share workload and resources. The overriding purpose of implementing the Garex 220 is to provide improved safety at sea under GMDSS, the Global Maritime Distress and Safety System. When a crew sends out a distress signal using DSC equipment by a simple activation of an emergency button, the signal with vessel identification and position is picked up by all other ships and coast stations within radio reach.

The database holding information about each ship's last known position also can be used to direct rescue operations and selectively contact the vessels that are closest. The same information is used for routing land-to-sea calls the shortest way possible."

A note from Gary Jackson, CA, points out that MEDFER beacon TI on 1631.4 kHz and run by Rex Wilson, AZ, has left the air. Gary says Rex was a good verifier and included photos of his MEDFER beacon with his verifications.

Gary also asks for help with QSLing two beacons. He has been unable to obtain a response from RWE, Camp Roberts, and from MER, Mercaderas, Colombia. Have any readers had success QSLing these beacon stations? Contact Gary at 7735 Center Parkway, Sacramento, CA 95823.

Jim Navary, VA, tells us he received details of transmissions from some of the Royal Australian Naval stations along with his QSL from Canberra Control.

Canberra CW:
4286, 6428.5, 8478, 12907.5, 16918.8 kHz (continuous); 22485 kHz (0001-0800); 25461 kHz (on request)
Callsign: VHP (naval periods), VIX (merchant periods)
NOTE: There was no indication of time for either period.
Transmitter site: Belconnen, A.C.T., Australia

Darwin CW:
4316, 6393, 8512, 12750 kHz (continuous); 17084, 22589 kHz (on request)
Callsign: VHI
Transmitter sites: Humpty Doo, N.T., Australia

USB Voice:
4375, 6510, 8122, 13116 kHz (continuous)
Callsigns: Canberra Control, Darwin Control, Cairns Control, Fremantle Control, Jervis Bay Control

Michael Regan, WI, says he uses a Hammarlund SP-600JX and a Radio Shack DX-302 for receiving: "Run the output into an MFJ-1278B modem, then into a Macintosh SE using a terminal program called MacTTY vl.24e, which in turn can handle baud rates up to 9600 baud. Because the MFJ has the capability, I can tune in CW,

RTTY, TOR and FAX and get it into the CPU in usable form."

A letter from Terry Michaels, WI, said in part: "I read with interest Perry Crabill Jr.'s comments on the 'Mystery Tower' in June's *POP'COMM*. One of my hobbies is the history of the early microwave radio routes that were built in the 1940s and 1950s.

"During World War II, AT&T began planning a trial installation of the new microwave radio technology they were developing. The company was under pressure to build intercity connecting routes to carry television signals for the rapidly growing television networks. The trial route went from New York to Boston and had seven repeater sites. Each of these repeaters consisted of a two-story concrete block building with horn antennas mounted on a platform attached to the top of the building. This trial route went into operation on Nov. 13, 1947.

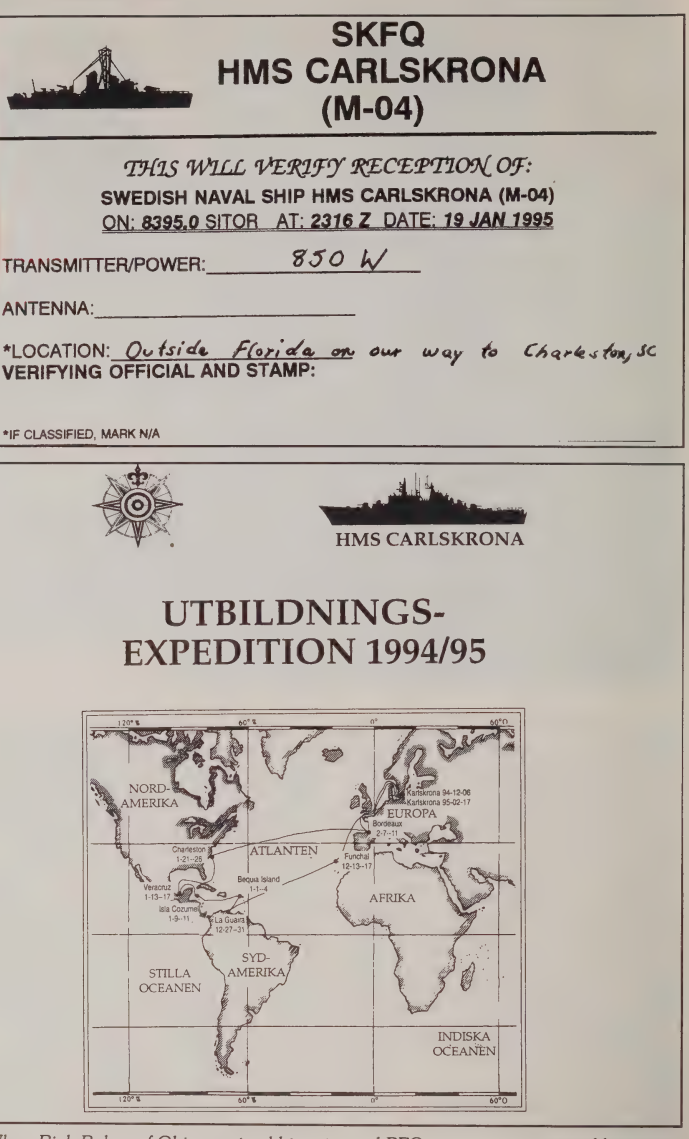
"AT&T then built a one-way route to carry television signals from Chicago to Milwaukee, which was completed Sept. 30, 1948. This route had three intermediate repeater towers built against the outside of the structure. There are several reasons for using this tower design. Structural steel was in short supply after the war, so it was thought a concrete tower would be more economical. The tower was adapted from a reinforced chimney design, for which contractors had the necessary erection forms on hand. Also, it was desired to place the microwave radio equipment as close to the antennas as possible to reduce signal loss in the connecting wave guide. This was accomplished by placing the radio equipment on the top floor of the building, with the antennas placed on the roof.

"AT&T then began to construct a coast-to-coast microwave system. It began in New York, with three repeaters between there and Philadelphia. These first repeater towers were concrete cylinders as previously described. However, it was realized a round building was not well suited for housing rectangular equipment bays. As the route went west from Philadelphia, the tower design changed to a square poured-concrete building with the stairway inside. The buildings ranged in height from 60 to 190 feet. The microwave route reached Chicago to Des Moines. The Tampico 'Mystery Tower' was on this part of the route (see photo).

It was found that these concrete towers were not economical to build; the limited space at the top for mounting antennas would later make expansion of the system difficult. The towers built west of Des Moines used a steel tower, the type commonly seen today. The microwave route eventually reached San Francisco, and coast-to-coast operation began Aug. 17, 1951.

"In addition to the coast-to-coast route, four more square concrete towers were built in Ohio, and five were built in upstate New York for branch routes. Altogether, 49 of the square concrete towers were constructed during 1949 and early 1950, a remarkable achievement that was noted in several publications of the time. It is interesting how the design for microwave towers evolved through several stages, probably because AT&T was in a hurry to get the first microwave routes built and used several preliminary tower designs that would have only existed on the drawing boards had more time been available."

Thanks, Terry, for the informative details.



When Rick Baker of Ohio received his returned PFC, it was accompanied by a map of the cruise taken by the vessel.

Before passing to the loggings, I want to wish each of you a happy holiday season, and may you always have good listening!

UTE Loggings: SSB/CW/RTTY/SITOR/etc.

All Times in UTC.

201: Beacon GL, La Grande Rivere, Quebec, Canada, at 0603, 886m. (AH)

209: Beacon MT, Chibougamau, Quebec, Canada. (AR)

241: Beacon SFZ, North Central Airport, RI, at 1635. (AD)

253: Beacon UR, Daugherty Field, Long Beach, CA, at 0528.(BV)

Save up to 44% on POPULAR COMMUNICATIONS

Get fast home delivery of Popular Communications and save $15.40 a year over the newsstand price. Save even more on 2 or 3 year subs.

- ☐ **1 year—12 issues: $22.95 (Save $12.45)**
- ☐ **2 years—24 issues: $41.00 (Save $29.80)**
- ☐ **3 years—36 issues: $60.00 (Save $46.20)**

Canada/Mexico—One year **$32.95** ($22.95 + $10 postage), two years **$61.00** ($41.00 + $20 postage), three years **$90.00** ($60.00 + $30 postage). Foreign—one year **$34.95** ($22.95 + $12 postage), two years **$65.00** ($41.00 + $24 postage), three years **$96.00** ($60.00 + $36 postage). Foreign Air Mail—one year **$82.95** ($22.95 + $60 postage), two years **$161.00** ($41.00 + $120 postage), three years **$240.00** ($60.00 + $180 postage). Payable in U.S. dollars only.

(Please print clearly)

Name_____

Street _____

City _____

State _____ **Zip**_____

☐ Check or Money Order (enclose in envelope)

Bill to

☐ MasterCard ☐ Visa

☐ American Express ☐ Discover

My account number is: **Expiration date:**_____

Note: Allow 6–8 weeks for delivery of first issue.

FOLD HERE

IMPORTANT: BE SURE TO ENCLOSE YOUR CHECK

POPULAR COMMUNICATIONS

The World's largest, most authoritative monthly magazine for Short Wave Listening and Scanner Monitoring. Read by more active listeners than all other listening publications *combined!* If you enjoy radio communications you'll love

POPULAR COMMUNICATIONS

For Faster Service Call

1-800-853-9797

RETURN ADDRESS (Please Print)

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

First Class Mail Permit No. 2055, Hicksville, NY

POSTAGE WILL BE PAID BY ADDRESSEE

POPULAR COMMUNICATIONS

76 North Broadway
Hicksville, New York 11801-9962

You Won't Miss a Thing With SCOUT™

Reaction Tune

*Scanner not included

The SCOUT™ Has Taken Tuning Your Receiver To a New Dimension

Featuring Automatic Tuning of your AR8000 and AR2700 with the Optoelectronics Exclusive, Reaction Tune (Pat.Pend). Any frequency captured by the Scout will instantly tune the receiver. Imagine the possibilities! End the frustration of seeing two-way communications without being able to pick up the frequency on your portable scanner. Attach the Scout and AR8000/2700 to your belt and capture up to 400 frequencies and 255 hits per frequency. Or mount the Scout and AR8000/2700 in your car and cruise your way into the future of scanning. A simple interface cable will connect you to a whole new dimension of scanning.

The Scout's unique Memory Tune (Pat.Pend.) feature allows you to capture frequencies, log into memory and tune your AR8000/2700 at a later time. A distinctive double beep will inform you when the Scout has captured a new frequency, while a single beep indicates a frequency that has already been recorded. For discreet monitoring, a pager style vibrator will inform you of any hits the Scout captures.

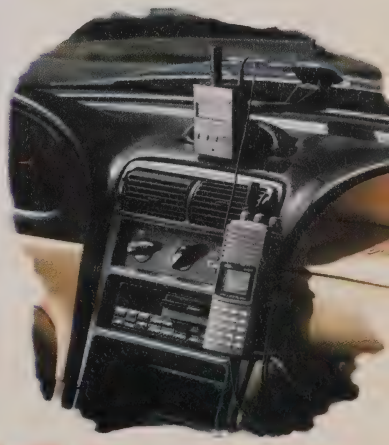
The Scout will also Reaction Tune and Memory Tune Icom CI-V receivers: (R7000, R7100, and R9000) and (Pro 2005/6 equipped with OS456, Pro 2035 equipped with OS535). Download the Scout frequencies to a PC with the Scout Utility Disk and CX-12AR (optional), then compare them to the Spectum CD-ROM/PerCon FCC Database (optional).

Act Now!! Let the Scout Reaction Tune you into The World of Scanning

SCOUT™ $449

Features

- Automatically tunes these receivers with Reaction Tune (Pat.Pend.) CI-V receivers (ICOM's R7000, R7100, and R9000), (Pro 2005/2006 equipped with OS456, Pro 2035 equipped with OS535) or AOR models (AR2700 and AR8000)
- Records and saves 400 unique frequencies
- Records 255 hits on each frequency in memory
- Digital Filter and AutoCapture (Pat.Pend.)
- 10MHz-1.4GHz single frequency range
- View frequencies in RECALL mode
- 10 digit LCD with EL Backlight
- 16 Segment RF signal strength bargraph
- CX-12AR Computer Interface (optional)
- PC Utility Disk for downloading memory to PC
- Rapid charge NiCads with 10 hour discharge time
- Scout Spectrum CD-ROM/PerCon FCC database (optional)
- AC Adaptor/Charger
- DB 32 VHF/UHF mini-antenna shown with Scout (optional)
- Distinctive Beeper/Vibrator indicate frequency hits



At right: Scout shown with CLIPMATE™. A handy windshield mount for Scout, for quick access and visibility.

CLIPMATE™ $25.00

OPTOELECTRONICS®

ORDER LINE
800•327•5912
Tel:305/ 771-2050
Fax:305/ 771-2052

5821 NE 14th Avenue • Ft. Lauderdale, FL 33334

Contact Factory for shipping prices. Visa, Master Card, & C.O.D.(cash or money order only)

All prices and specifications are subject to change without notice or obligation

MADE IN THE U.S.A.

CIRCLE 166 ON READER SERVICE CARD

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/Ied/location
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

278: Beacon OS, Los Angeles International Airport, CA, at 0529. (BV)

282: Beacon GWF, General Fox Field, Lancaster, CA, at 0529. (BV)

300: Beacon UGT, Guantanamo, Cuba, at 0751, 1494m. (AH)

311: Beacon TBG, Panama City, Panama. (AR); Beacon U, Partridge Island, New Brunswick, Canada, at 0611, 366m. (AH)

329: Beacon YEK, Eskimo Point, Northwest Territories, Canada, at 0702, 1653m. (AH)

369: Beacon ZDX, St. Johns, Antigua. (AR)

370: Beacon PAI, Barton Heliport, Pacoima, CA, at 0536. (BV)

372: Beacon MF, Mansfield, OH, at 0711, DSB. (PC)

375: Beacon TGE, Guatemala City, Guatemala. (AR)

379: Beacon TL, Tallahassee, FL, at 0629, 1063m. (AH)

380: Beacon COL, Barra del Colorado, Costa Rica. (AR)

385: Beacon GAI, Gaithersburg, MD, at 0815, 350m; Beacon HYX, Saginaw, MI, at 0648, 653m. (AH)

387: Beacon PV, Providenciales, Turks and Caicos Islands. (AR)

392: Beacon VEP, Vero Beach, FL, at 0658, 1089m. (AH)

396: Beacon NEL, Lakehurst, NJ, at 0452. (PC)

400: Beacon SLO, Salem, IL, at 0526. (PC)

404: Beacon Y, North Bay, Ontario, Canada, at 0804, 526m; Beacon YSL, Leonard, New Brunswick, Canada, at 0707, 426m. (AH)

410: Beacon AAF, Apalachicola, FL, at 0712, DSB. (PC)

413: Beacon YHD, Dryden, Ontario, Canada, at 0828, 1182m. (AH)

415: Beacon HJM, Bonham, TX. (AR)

423: Beacon OC, Ocala, FL, at 0831, 1058m. (AH)

432: Beacon IZN, Lincolnton, NC, at 0728, 672m; Beacon MHP, Metter, GA, at 0727, 859m. (AH)

515: Beacon RRQ, Rock Rapids, IA. (AR); Beacon OS, Columbus, OH, at 0731, 630m. (AH)

517: Beacon GQ, Kansas City, MO. (AR)

521: Beacon TVX, Greencastle, IN, at 0709, 672m; Beacon JJH, Johnstown, NY, at 0713, 185m. (AH)

530: TIS, WPGX842, Walt Whitman Bridge (NJ and PA border) at 2243. (AR)

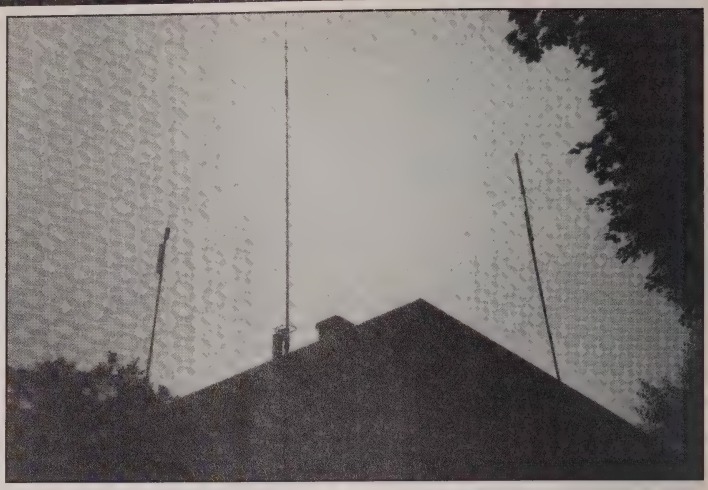
830: TIS, Penn's Landing, Philadelphia, PA, at 1801. (AR)

1610: TIS, Valley Forge National Historical Park, Valley Forge, PA, at 2234; TIS, Philadelphia International Airport, at 2227. (AR)

1645.01: MEDFER beacon "A", Quartize, AZ, apparently solar-powered. Owner: Kirk Wines, Box 624, Adelanto, CA 92301. (GJ)

1652.20: MEDFER beacon "A," Adelanto, CA. Same owner/address as 1645.01 MEDFER. (GJ)

2526: U/i stn in RTTY, 50b at 2207 w/encrypted msgs after 15 mins of "XV RYRYRY INT ZBZ". (AB)



Here is the antenna layout of August Stellwag of New York. At the left is the Dressler ARA500 active antenna for VHF/UHF and mounted above it is the Dressler ARA30 active antenna for general HF coverage. In the center is a Cushcraft R3 for amateur bands and on the right is a Vanguard Turnstile for polar-orbiting satellites on 137 MHz.

2582: Bermuda Harbor radio w/marine info bcst for surrounding areas at 0107. (AR)

2670: NMN80, USCG, Hampton Roads, VA, w/marine info bcst in USB at 0209. (AR)

3067: NT7R w/GRID in CW at 2130 w/coded msgs and E68W w/5USW at 2135 in CW, QTC 027. All u/i. Also see 3831 and 4602.5 kHz for similar activity. (AB)

3151: Irish patrol vessel P20 "Deirdre" w/unid Irish mil stn in SITOR-A, 100b at 2210. Opr chatter. (AB)

3196: Prague meteo in RTTY, 50b at 2022 w/synops. (AB)

3413: Shannon Ireland aviation wx at 0108. (TB)

3824: Swedish rhapsody numbers stn in AM at 2300 w/msg for 89859. 5F grps in GG by YL opr. (AB)

3831: V58J w/HJ9U in CW at 2245. Both u/i. (AB)

4029: Nbrs stn, Thursday 0600, "Atencion 51004" then 100 grps. (TM)

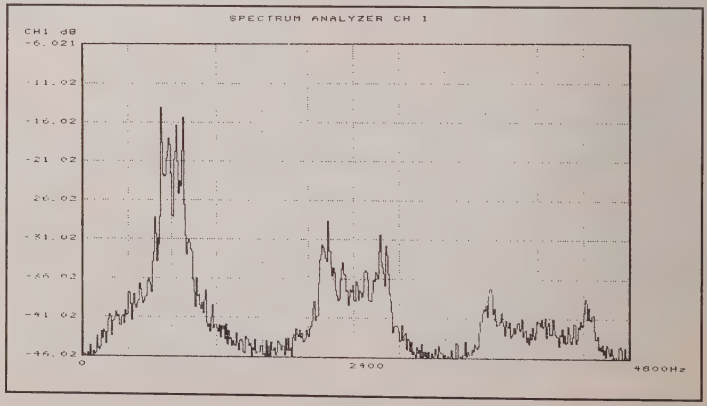
4275: U/i CW stn at 0410 sending series of numbers w/BTs, ARs, colons and closed parenthesis. Stn xmtd non-stop and still was going when I discontinued monitoring at 0612. (TS)

4329: WCC, Chatham, MA, in CW clg CQ QSX, w/V W mkr. USB at 0634. (SW)

4463: Mossad YL rptng "Foxtrot Tango Juliet 2" at 2100 in USB. (SM)

4517: AFA3TTT, AFA3HAT, AFA3SI, AFA3UE, 3TSSI in USB at 0013 w/ck in. At 0015 hrd warble jamming. AFA3AW, AFA3AK discuss 2-hour net control, RTTY tfc and heavy QRN because of thunderstorms at their QTH. Jamming intensifies. (AN)

4602.5: U/i w/ESUP ESUP 45530 26798 BATIST for several mins. USB at 2355. Two days later hrd W V XXXXXX ESUP ESUP 06365 BARWINOK 570 (rptd 3x) in CW at 2210. On other days, noted many stations and control using many different callsigns. (AB)



Tom Sevart of Kansas heard this signal on 6963 kHz. Signal analysis by Kevin Tubbs of Vermont indicated: "An FSK signal shifting about 170 Hz and keying at an unknown rate. Signal is in idles or sending a repetitive pattern about 200 bps."

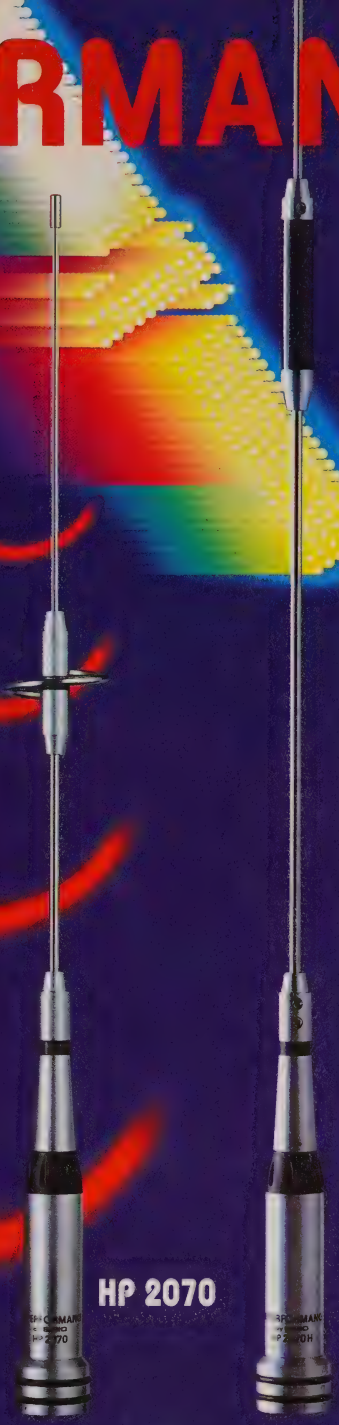
HI-PERFORMANCE

The new Hi-Performance line is a hi-professional range of mobile antennas for the discriminating Radio Amateur. Best material quality, hi-tech design and maximum performance; this the result of years of experience and technological research by Sirio. Hi-Performance line, second to none !!

We are looking for distributors in the U.S.A. please, contact us !

- HI-TECH DESIGN
- BEST QUALITY MATERIALS
- GOLD PLETED BRASS CENTER PIN WITH LOW DIELECTRIC; LOSS "TEFLON ®" INSULATOR

THE BEST PERFORMANCE

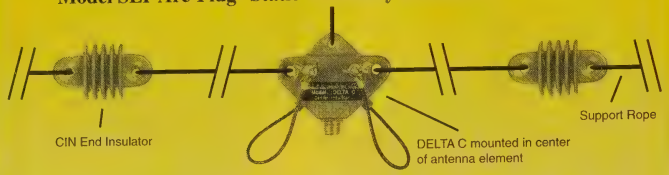


HP 2070 **HP 2070 H**

SIRIO antenne

Strada dei Colli Sud, 1/Q - 46049 VOLTA MANTOVANA - MN - ITALY
Tel. (39) 376/801515 - Fax (39) 376/801254

ALPHA DELTA DX Series Monoband Dipoles
for Amateur, Commercial and SWL Applications—
Utilizing the Model DELTA-C Center Insulator with the built-in Model SEP Arc-Plug® Static Electricity Protector!



- Model SEP Arc-Plug®Protector is a special gas tube component designed to "bleed off" static electricity that slowly rises on antennas from thunderstorms, wind and even cloudy days. These static charges can damage sensitive components in receivers or transceivers.
- The antennas are fully assembled—not a kit—and includes the Model DELTA-C center insulator, Model CIN End Insulators, support rope and 12GA Insulated high strength solid copper wire. (ALPHA DELTA antennas do not use the smaller 14GA wire found in other brands) The SEP is built-in to the DELTA-C Insulator. The DELTA-C hardware will take either coax or open line feeders.
- For SWL or Commercial applications, any model can be user trimmed to any segment in the spectrum from the model's design frequency thru 30MHz. Formulas and cutting charts are included.
- The antennas are rated for full legal transmit power and therefore are very efficient as receiving antennas. They can be configured as dipoles, inverted -Vs or sloping dipoles.

- Model DX-80.....3.5 MHz.....133 ft. long.....$49.95 ea.
- Model DX-40.....7 MHz.....66 ft. long.....$39.95 ea.
- Model DX-20.....14 MHz.....33 ft. long.....$39.95 ea.

ALPHA DELTA—Advancing the Art of the Simple Dipole

At your Alpha Delta Dealer or add $5.00 for direct US. orders. Exports quoted.

ALPHA DELTA COMMUNICATIONS, INC. AA

P.O. Box 620, Manchester, KY 40962 • (606) 598-2029
fax • (606) 598-4413

Radio—"The *Original* Information Superhighway"
—*Alpha Delta Makes it Better*

CIRCLE 53 ON READER SERVICE CARD

4665: Mossad bcst, USB at 2200, msg for VLB, VLB14B88. Unusual msg. (AB)

4742: Architect w/Ascot 2595 w/wx for Lyneham and Brize Norton. USB at 1849. (AB)

4779: At 2100 Saturday, Swedish rhapsody tune being played foll by YL/GG w/24249 and into 5F grps. (SM)

4843: RKLM, Arhangels Fishery radio in CW at 1823 w/tfc list. (AB)

5091: YL/EE in USB at 0432 rpts "JSR2" in phonetics; YL/EE in USB at 2232 rpts "JSR2" in phonetics. Both skeds weak. (DS)

5118: Cut nbr stn in CW w/5F grps at 0100. After xmsn, white noise on freq. (See 7681 kHz entry.) (TS)

5153.9: SLHFM "S", Arkhangelsk in CW at 1930. New freq? (AB)

5211: WGY912, FEMA special facility, Mount Weather, Berryville, VA, at 1612 in USB wkg USAF MARS AFAIVE in Lancaster, NH, during SHARES exercise. (RB)

5390: CGD206, Bell Canada, Quebec, at 0125 in USB w/FF R/T calls to bush country phones. (RB)

5419: Sunday 0700, "Atencion 51023," then 100 grps; Thursday 0400, slow "Atencion 05," then off. (TM)

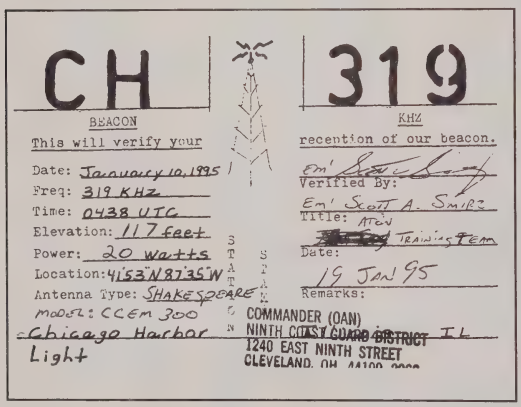
5680: SAR exercise Bright Eyes in USB at 1440. Participants incl: Belgian AF 95 (heli) with c/s SAREX95, RAF Nimrod c/s SAREX51 and RAF heli c/s SAREX125. Exercise coordinated by Plymouth Rescue and Yarmouth CG. SAREX95 needed fuel and wanted to divert to Valkenburg in the Netherlands, but cancels request because Yarmouth terminated exercise at 1630. On another day, hrd Edinburgh Rescue in USB at 0630 w/Alpine 20 (RAF Mountain Rescue Team Stafford), Alpine 2 1 (MRT Valley), Alpine 22 (MRT Kinloss), Alpine 23 (MRT Leuchars), Alpine 24 (MRT Leeming) and Alpine 25 (MRT St. Athan). Rdo cks and wx forecasts. (AB)

5696: Rescue 6035, USCG HH-60J, at 0227 wkg CAMSLANT Chesapeake, NMN, re commencing hoisting ops at posn given. This was re fire on M/S Celebration, Carnival Cruise Lines cruiseship. At 0240, Rescue 1720 (HC-130) w/pp Miami Ops adv situation under control on board. At 0449 STINGRAY 12, US Customs a/c, wkg NMN req rdo guard, airborne enrt AirSta Miami w/5 POB. At 0636 NBTM, USCGC Polar Star (WAGB-10) clg/wkg CommSta Kodiak, req ck on HFDL (HF Data Link) signal, QSY 6 MHz SCN. All in USB mode. (RB)

5835: Nbrs bcst in USB at 1800 for William Susan Susan, QRU. (AB)

6227: KVY565, Apex Towing, Clayton, MO, in USB at 1123 wkg u/i boat. At 1129, clg W.P. Jackson. (JN)

6262.5: U.S. Naval Academy Annapolis, MD, at 2316 w/midshipmen's packet system. YP698 wkg YP687 w/query, YP687 ack YP698, and "PRODEV"w/"BLN 1 to YP SQD Al" re wx advisory. Others noted incl MESHOP (Marine Elex Shop),



CH 319

BEACON KHZ

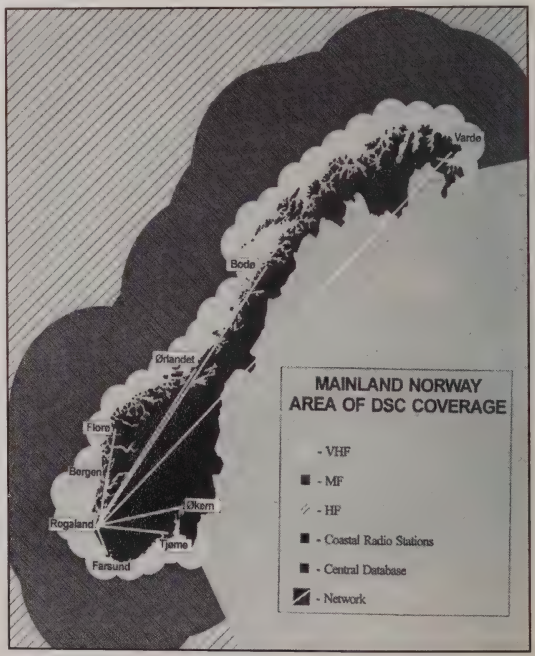
This will verify your recention of our beacon.

Date: January 10, 1995
Freq: 319 KHz
Time: 0438 UTC
Elevation: 117 feet
Power: 20 watts
Location: 41°53'N 87°35'W
Antenna Type: SHAKESPEARE
model: CCEM 300
Chicago Harbor Light

Verified By: Em' Scott A. Smith
Title: ATCN
Date: 19 JAN 95
Remarks:

COMMANDER (OAN)
NINTH COAST GUARD DISTRICT
1240 EAST NINTH STREET
CLEVELAND, OH 44199-2060

Allen Renner of Pennsylvania used this PFC for his reception verification of Beacon OCH.



Norwegian coastal radio network and its areas of coverage.

YP681, YP679, YP684, YP695, YP685, YP690 and YP676. The "YP's" are training vessels. (RB)

6272.5: NELP, USS Joseph Llewes (FFT-1078) at 0427 in SITOR-B w/tfc to NMC, USCG CAMSPAC, San Francisco, "INT QRK" and req if was hrd on 8 MHz. (RB)

6305: Warble jammer at 0813. (TS)

6380: EAD2, Madrid, Spain, in CW w/QSX 6 and 8 MHz at 0224. (SW)

6465.5: ROD7, Murmansk Fishery radio in CW w/mkr hrd at 0710. (AB)

6492: VCS, Halifax CG radio, Nova Scotia, Canada, in USB at 0631. Clg CQ QSX 4, 6, 8 MHz and channels 3/4 and 7/8. (SW)

6535: Dakar Radio (SAT-I, MWARA) at 0345 wkg British Airways flight w/selcal ck BR-AF (B747-400). At 0729, Nandi Aero, Fiji (SP-9 RDARA), wkg Hawaiian 465. Both in USB mode. (RB)

6730: Italian AF, Sigonella, w/70 and 58. Rdo cks and chatter in Italian at 0942 in USB.

6735: Foxtrot Tango, USN Link-11 coordination net NGS, at 0022 in USB wkg STEEL JAW 01 (E-2C) re posn, course. (RB)

6796: Monday 0600, "Atencion 84054" then 78 grps. (TM)

6814: YL/EE in AM at 1917 w/5F grps. Down at 1946. (SW)

6817: SPAR 66 clg SPAR 65 at 2214. No joy. (AR)

6826: YL/SS in AM at 0300 rptng "Atencion 04499." This stn here every Wednesday at 0300. (TS)

6933: CW stn at 0255 rptng 757 and into 5F grps. Signed down w/000. (TS)

7535: SESEF Norfolk w/tests: NBIO, USS Shenandoah (AD-44) at 1403 testing KY-75 crypto gear. NEWZ, USS Deyo (DD-989) at 1555 w/start of HF xmtr tests w/xmtr No. 6. NNVA, USS Norfolk (SSN-714) at 1559 for rdo ck. "Fitzgerald" at 1847, precommissioned DDG-62 w/HF rdo tests of all modes. Primary mode all above USB. (RB)

7536.5: AC4, u/i U.S. military in USB at 1643 wkg HOPPA 11 w/ck on radio 2 then off. A whoisit for several years. (RB)

7681: Strong carrier on at 0350. Carrier off air at 0411 and was replaced by CW 5F cut nbr stn. After CW msg, white noise on freq. (TS)

7709: Tuesday 0300. 685 and 1-0 count, then Grupo 53 and into 3/2 SS grps. (TM)

7862: Saturday 0300. "Atencion 80494" then 79 grps. (TM)

8240: USCGC Knight Island (WPB1348) in USB at 2352 clg NMG w/no joy. Anyone have a callsign for this cutter? (JN); VCGN, CS John Cabot at 2254 in USB wkg CAMSLANT Chesapeake, NMN, for wx. Vsl is now Cable Ship John Cabot, is ex-CGDJ CCGS John Cabot, which was a cable ship/icebreaker. (RB)

8297: AAFA,USAV SP4 James A. Loux at 0302 in USB wkg AAC2, Harbormaster, Fort Eustis, VA. Adv will call back w/posn and status report at 0600. (RB)

8359: M/V Wakashio Maru 81 in CW at 0123 wkg OBC3, Callao, Peru w/msg to Gostera Callao (SHIPREP). (JN)

8382.5: BOAB, M/V Tai He, a Chinese container ship at 0404 in SITOR-A w/tlx re storage plan. (RB)

8410: RCV, Bliava Naval, Russia, DE RIS94, u/i in CW at 0608. (MR)

8412: UEWY, TH Ivan Makarin, a bulk carrier/container ship fm Vladivostok at 0141 in 50/170 w/MSKTLG+ crew TG tfc. (RB)

8415: GKE4, Portishead, England, at 0218 w/mkr and short RTTY bursts. (RK)

8478: FUF, Fort de France Naval, Martinique, at 0634 w/RTTY 75b RYs. (SW)

8569: WNU43, Slidell, LA, in CW at 1931 w/CQ QSX mkr. Tough copy because of QRM from other stn under signal. (SW)

8804: OM/EE w/heavy SS accent w/cryptic msgs (See March *POP'COMM*) "The horse is in the gate." "The turtle will point the way." "Horse" is street name for heroin and "turtle" may refer to one of the Dry Tortugas islands off the Florida Keys. Hrd at 0300 in USB. (RK)

8805.5: YL/SS, very sexy sounding, and 3 OM/SS w/chit-chat at 0210. Caught words "amore" and "cojones" several times! (RK)

8939: Volmet network in USB at 1340 incl Moscow, Kiev, St. Petersburg and Rostov. (AB)

8968: SIDECAR wkg MAGIC at 1730. Discussed various msgs to be put in crypto code at undisclosed time. (AR)

8971: GULFSWAY (British accent) in USB at 2327 wkg 7CV. At 2344, GULFSWAY tells 7CV to try to establish comms w/vessels. (AR)

9003: Amman, Jordan, LDOC in USB at 1723 w/Jordanian 034. (AB)

9017: USAF SAM 27000 in LSB at 1122 w/Andrews. PP to Defense Attache Office, Moscow. (AB)

9023: BLUE CRAB and OKI SAM w/rdo ck, then BC told OS to "go green" after which there was xmsn of digital or scrambled data. Similar activity took place between BLUE CRAB and DEERHUNTER and CONTRAS. Hrd 0100-0107 in USB. (BM)

9028: U/i stn in USB at 1843 w/RYs in RTTY and into encrypted msg. (SW)

9926: YL/SS in AM at 0205. Very broad sig, plus or minus 5 kHz. Finale, finale at 0209. (SW)

10125: Mossad activity in USB at 2200. Prob malfunctioning equipment. Almost constant white noise and often "telephone ringing" sound hrd. After "ring" hrd, all Mossad xmsns that are active at that moment can be hrd at same time. Kol Israel uses same site for their nightly bcsts. During those bcsts, same sounds hrd/mixed w/Mossad xmsns. RTTY stn on 16339.5 kHz also has Mossad on top. Loggings between 1952 and 2015: VLB14B88 //6370//4665, CIO2 //8025, ART + 5L grps //5437//4880, EZII //6840, FTJ9 //4463. Hrd 2345-0015 CIO2, YHF + 5L grps //3840, VLB2 //4665, FTJ2 //4463, PCD2 //4270l/3150. (AB)

10980: RDD79, Moscow meteo at 1645 w/FAX 90/576 w/fair chart. (RH)

11080.2: SANA Damascus in RTTY 50/423 at 1604 w/nx in AA. (RH)

11120: MFA Warsaw at 0955 in POL-ARQ, 100b, callsign SNN299, w/Polish news. (AB)

11133.1: BZG41, XNA Beijing in RTTY 50/406 at 1653 w/nx in FF. (RH)

11175: SNAKE 32 w/pp to Nellis AFB, NV, asking re wx at "Watertown Strip" (this is one of the many names of Area 51). Hrd at 2000 in USB. (RK); AAEF, USAV LTG William B. Bunker (LSV-4) at 2130 wkg Ascension GHFS pp RAIDER, gives posn/status, gets wx for his track route. This is a Logistics Support Vessel fm 1099th Transportation Detachment, Fort Eustis, VA. At 2134, ADMP, USAV Five Folks (LCU-2018) wkg Ascension for same. Both in USB mode. (RB)

11187: STACY clg SILKHORN at 0222 asking to set up "2 quad"(?). Unable to do so: "This is not a secure channel." (RK)

11232: Trenton Military, Ontario, Canada, in USB at 1639 w/wx conditions for Trenton and Ottawa. Primary, 11232 kHz; secondary 9007 kHz. (TB)

11454: "Dripping Water" signal here at 0001. (TS)

11465: "Bagpipe" sounding signal hrd at 0227. Haven't hrd this in many years and still don't know what it is! (RK) During World War II, this was a frequently encountered form of jamming. (Ed.)

12092: At 0000, YL rptng "Charlie Delta" until 0005 when 5F grps sent in GG to 162. (SM)

12160: OTH radar at 0102. (TS)

12353: HQDX4, S/V Polynesia wkg Yankee Clipper (both Windjammer Barefoot Cruises saling vessels). Chit-chat and very interesting. USB at 2125. (JN)

12359: Stn South Bound II w/wx reports. Other vessels hrd incl Sundance, Solar Flare, Margarita, Riot. The Margarita belongs to singer Jimmy Buffett. (RK)

12426. 5: ORJH, Belgian Naval vsl Godetia wkg OSN, Oostende Naval, simplex wkg. My first Belgian warship logged. GW at 2105. (JN)

12498: 9HOK4, Superventure, Selcal 72002 in TOR w/tfc in EE. In/near West African port. Having difficulty getting lashing rope/chain to secure deck cargo. (MR)

12565: UFOM, BMRT Nikolay Kuropatkin ID MB-0023 at 2146 in RTTY 50/170 w/crew TGs to Murmansk radio. (RB)

12574: TH Palekh in RTTY at 2053. In port at Puerto Cortes, Honduras, scheduled to West Sahara port, Kuba, then to St. Petersburg. (MR)

12808.5: VTG7, Indian Navy, Bombay, in CW at 1455 w/mkr. (RH)

13250: Speech inversion scrambling in USB at 2357. (TS)

13330: "Houston," Universal Radio, Houston, TX, at 2101 in USB wkg N94BA, departure time, selcal ck JP-KR. At 2105, wkg SUN COUNTRY 694 w/rdo, selcal ck, FH-JK. (RB)

13356: Air Jamaica Dispatch in USB at 2135 wkg Air Jamaica 041. Advised 041 to overfly Baltimore and go to Philadelphia. Passengers will be bused from Philadelphia to Baltimore. (JN)

13528: SLHFMs "C" and "S" in CW at 2050. New freqs for these mkrs; USAF Offutt in CW at 2050 w/huge EAM (SLNDPI 338 characters) at 2100 and a normal 26-character EAM (GOAQFN) at 2149. (AB)

13775: YL/EE rptng "Mike Delta" fm 0900-0905. Then "Message for 565 565 61 Groups." "Attention" and into 5F grps. Msg rptd another day at 1330 on 12092 kHz. (SM)

13880: Msg to "RAU" (new sked) at 0810 in RTTY, 75b. Prob RR diplomatic. (AB)

14632: CW stn at 0010 sending 5F grps, signed down w/BT BT 205 205 173 173 00000. (TS)

14750: Mossad YL rptng "Charlie India Oscar 2" at 1200. (SM)

14982.5: RBV76, Tashkent meteo w/FAX 60/576, poor chart. Copied at 1625. (RH)

15015: Albrook, Offutt, Andrews and MacDill AFBs w/SKYKING bcst. Hrd at 1652 in USB. (RK)

15043.8: MFA Caira in SITOR-A at 1636 w/tfc in AA. (RH)

15980: Everyday at 1200, Mossad YL rptng "Echo Zulu India." Today sent 5L msg of 88 grps. (SM)

16147.8: U/i in ARQ-E3 at 1230 w/5L grps. RFF Selcall, prob FF in France. (RH)

16187: Nairobi meteo in FAX 120/576 at 1247 w/very good wx chart. Used callsign 5YE. (RH)

16697.5: WECB, R/V Melville, a Scripps Institute R/V, at 2246 in SITOR-B w/tfc for WWD, Scripps Institute, La Jolla, CA. (RB)

16708.5: URUS, M/V Boris Butoma at 1350 in ARQ wkg WLO, Mobile, AL, w/tlx to Bethlehem Steel Plant, Sparrows Point. (JN)

16792: TH Kruzenshtern in RTTY w/pers tfc in RR. Vsl near Bermuda. (MR)

16802: UQIK, BMRT Kharovsk, hull ID MB-0399 at 2335 in RTTY 50/170 w/crew TGs to Murmansk. (RB)

16804: TH Murom in RTTY w/RR personal tfc and RR ofc tfc. Hrd at 1528. (MR)

16807: 9VG82, Singapore radio, in SITOR-B at 1135 w/tfc list. (RH)

17499: YL rptng "70519" at 1200 in between "Cherry Picker" tune. From same outfit that sends "Lincolnshire Poacher" tune, which was on at same time on 14487/15682/16084 kHz. (SM)

17502.5: YL rptng "William Susan Peter" at 1200 foll by "Queen Robert Union" (no msg) at 1205. (SM)

18230.2: GFL23, Bracknell meteo at 1152 in RTTY 75/240 w/RYs and ID. (RH)

18380.4: MOD Paris at 1505 in ARQ-E3 100/386 w/990 grps of 5L grps (6 pages), plus a "CdeV". (RH)

18441.2: JMJ5, Tokyo meteo at 1147 in FAX 120/576 w/good chart. (RH)

20304.7: U/i at 1220 in SITOR-A, presume EGY Embassy, Kinshasa, Zaire, w/tfc in AA. (RH)

20675: YL/GG rptng "Charlie Delta" fm 1100-1105. Then 5F grps for 162. (SM)

22293: 9HLL4, M/V Gimo One, at 1410 in ARQ w/tlx to T.K. Boesen A/S Copenhagen. (JN)

Logging contributors this month were: AB—Ary Boender, Netherlands; RB—Richard Baker, OH; TB—Tim Bowling, WV; PC Perry Crabill Jr., VA; AD—Allan Dunn, RI; AH—Al Hemmalin, RI; RH—Robert Hall, South Africa; GJ—Gary Jackson, CA; RK—Richard Klingman, NY; BM—Bill Myers, Ontario, Canada; SM—Simon Mason, England; TM—Tom Mazanec, OH; AN—Anonymous, IL; JN—Jim Navary, VA; AR—Allen Renner, PA; MR—Michael Regan, WI; DS David Sabo, MD; TS—Tom Sevart, KS; BV—Bjorn Vaage, CA; SW—Sue Wilden, IN. Thanks to all. ■

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Plan to Roll Out Wireless Services

As part of its ongoing effort to expeditiously license a wide range of wireless telecommunications services, the FCC announced a plan to reduce burdens and enhance the competitive potential for 220-MHz services. The 220-MHz service can provide a variety of communications services, including two-way data transmission, paging and traditional dispatch services.

This action by the FCC will speed licensing and enable 220-MHz licensees to keep up with consumer demand for these new and evolving services. The FCC's proposals are intended to promote the continued development of the 220-MHz service and to enable licensees to implement new communications services to meet future needs of the American public.

The Commission proposed to permit 220-MHz licensees not only mobile services, but fixed wireless services as well, such as data transmissions among automatic teller machines. The commission also proposed to allow 220-MHz licensees to offer paging services.

For future licensees in the 220-MHz band, the commission proposed to:

•Assign 60 channels in 172 "Economic Areas." This is defined by the Bureau of Economic Analysis in the Department of Commerce.

•Assign 65 channels in areas defined by five "220-MHz regions."

•Allow all applicants, both private and commercial, to apply for these channels.

•Assign the channels through competitive bidding.

•Provide 10-year license terms and require licensees to meet five- and 10-year construction benchmarks.

•Eliminate channel-use restrictions, such as "data only" and "non-trunked."

For licensing nationwide channels, the commission sought comment on three alternative methods of disposing of 33 pending Phase I applications for nationwide non-commercial channels:

•Return the applications without prejudice, and auction nationwide licensees under competitive bidding rules proposed.

•Conduct a lottery to award the four available nationwide channels.

•Grant authorizations among the 33 applicants through comparative hearings.

The commission also sought comment on whether the framework of allocation, licensing and operational rules for nationwide licenses should apply to the 33 pending applications if those applications are awarded pursuant to lotteries or comparative hearings. For example, the commission asked commentaries to address whether licenses granted under either of these options should continue to be governed by current rules, with the authorizations awarded for non-commercial use only, or whether licenses obtaining these authorizations should be permitted to operate under the rules proposed for nationwide licensing.

In addition, the FCC sought comment on how to treat pending, mutually exclusive applications for non-nationwide 220-MHz licensees.

The commission tentatively concluded that the principal use of the Phase II spectrum, with the exception of the channels reserved for the Public Safety Radio Service and Emergency Medical Radio Service, is likely to be for subscriber-based services for compensation. Therefore, mutually exclusive applications for these channels should be assigned by competitive bidding. The FCC proposed simultaneous multiple-round auctions. In addition, this proposal contains special provisions for designated entities (which are defined by the statute as small businesses, women, minorities and rural telephone companies), with small business eligibility depending on size.

Freeze on Offset Channels in the 450-470 MHz Band

The commission has adopted Report and Order PR Docket No. 92-235, FCC 92-255, to promote more efficient use of the private land mobile radio (PLMR) spectrum below 800 MHz. The commission formulated a narrowband channel plan in order to promote spectrum efficiency. Under the new plan, channels in the 450-470 MHz band available under former section 90.267 of the Commission's rules, 47 C.F.R. §90.267, that are 12.5 kHz removed from regularly assignable channels and reserved for low-power operation ("12.5-kHz offset channels") can be assigned for high-power operation. The commission recognized, however, that there still is a need for low-power channels. It stated that frequency coordinators, as part of the coordination transition plan, could designate specific channels for low-power use. A key part of the frequency coordination plan is the consolidation of the 20 PLMR services. The commission provided the PLMR community three months to negotiate and submit a consensus plan for consolidation.

Hewlett-Packard Co. (HP) submitted a letter to the chief of the Private Wireless Division, requesting that in light of the Aug. 18 effective date of the new rules, the commission protect current operations on these 12.5-kHz offset channels until the underlying issues regarding frequency coordination and the establishment of dedicated channels in the 450-470 MHz band for low-power use are addressed. HP stated hospitals use tens of thousands of HP telemetry devices operating on the 12.5-kHz offsets to monitor electrocardiographs and other critical information on the status of cardiac patients. HP explained that these telemetry units play an important role in allowing cardiac patients to become ambulatory within limited proximity to the treating hospital, thereby facilitating recovery and reducing in-patient costs. HP suggested that medical telemetry and high-power operations cannot coexist on these 12.5-kHz offset channels.

The bureau agrees with HP that a problem could develop if many applicants were to file for and obtain high-power authorization on these offsets prior to coordinators identifying a new location for low-power operations. Therefore, license applications requesting power in excess of that now permitted on the offsets (e.g., 2 watts output power in all services except the Special Industrial Radio Service, where entities may be licensed for an effective radiated power of up to 100 watts) will not be accepted for filing until issues are resolved relative to the consolidation of radio services and/or the designation of dedicated channels in the 450-470 MHz band for low-power use. Upon the resolution of these issues, the commission will notify the public as to the lifting of the freeze.

$10,000 Forfeiture for Operating Broadcast Station Without License

The FCC both granted and denied in part the Application for Review filed by Stephen P. Dunifer, and issued a forfeiture of $10,000 for operating an FM broadcast station without a license. Dunifer had operated "Free Radio Berkeley" in California.

In Dunifer's Application for Review, he contends that the commission's broadcast rules constitute a complete ban on low-power audio broadcasting thus violating the First Amendment right to free speech, the commerce clause of the U.S. Constitution and international treaties. He further contends that the FCC's action assessing the forfeiture failed to meet established procedural requirements, violated the Fifth and Sixth Amendments, and violated the due process and the equal protection clauses of the Constitution. In addition, Dunifer argued that the $20,000 forfeiture assessed against him was excessive.

The FCC stated: "Sections 301 and 303 of the Communications Act specifically au-

thorize the commission to regulate intrastate as well as interstate communications, and any communications capable of causing interference to interstate communications. Because the purpose of the act, among other things is to prevent interference, the commission need not show interference to justify its regulatory scheme. With respect to the assertion that the commission's rules violate international treaties, Mr. Dunifer has not pointed to any specific treaty or international law that allows him to broadcast without a license."

Dunifer contended that he should have received a citation or warning before the issuance of the Notice of Apparent Liability. Because he engaged in broadcasting, an activity that requires a license, the FCC claimed he was not entitled to a warning. With respect to Dunifer's due process claim, the FCC said his monetary forfeiture can be appealed through a trial de novo in U.S. District Court, with the opportunity for a hearing or cross-examination.

Section 503(b)(2)(C) of the act establishes a maximum of $10,000 per violation or per day of violation for violators who are neither common carriers, cable operators nor broadcast licensees or applicants. Dunifer was charged for only one violation. In light of the intentional nature of the violation, as well as his "patent disregard for the rules," the commission said it assessed the maximum forfeiture.

Online Forum for Telecommunications Issues Discussion

The FCC introduced on the Internet an open forum in which Chairman Reed Hundt will give his views on various important issues in the telecommunications field and solicit responses from the public.

The forum is an experimental service and will not be conducted in real time. Hundt periodically will review and comment on the ongoing discussion.

Anyone with World Wide Web access to the Internet and a graphics browser may participate. The online community may join the forum by visiting the FCC's homepage at http://www.fcc.gov and selecting "Chairman's Forum."

Appropriate contributions include legal issues, the merits of various kinds of technology and means for implementing them, methods to encourage more appropriate programming and related issues.

Online Data Research Access

The FCC announced the addition of online data research features in the computer systems located in the Wireless Telecommunications Bureau/Commercial Wireless Division (Public Reference and Information Branch in Room 628, 1919 M St., N.W., Washington, DC 20554).

In an effort to improve customer service and assure public access to prompt and efficient research information, they are offering access to online data research in Common Carrier Cellular and Common Carrier Land Mobile (CLM) services.

Information may be queried in a variety of methods: company name, file number, call sign, market number, coordinates and frequency, to name a few. The reference room staff will be available to demonstrate how to access the online information. Also, system user manuals will be distributed during regular reference room hours.

Please refer questions or comments to Maria Ringold, Chief WTB/CWD, Public Reference and Information Branch, Room 632-K, 1919 M St., N.W., Washington, DC 20554, or call (202) 418-1350.

Consumer Protection and Enforcement

The Common Carrier Bureau's Enforcement Division reported its efforts to educate and protect telecommunication consumers. The Enforcement Division expects to receive 20,000 written complaints and 30,000 telephone inquiries this year. Five years ago, the bureau received 9,000 written complaints and about 17,000 telephone inquiries.

The bureau's Enforcement Division is

Call Toll Free
1-800-666-0908
Pricing and Orders Only

YAESU FRG-100
Worldwide desktop communications receiver
Covers 50kHz - 30MHz
AM/SSB/CW (FM optional)
- 50 memory channels
- Built in selectable filters 2.4, 4, 6kHz
- *WRTH* "Best Communications Receiver"
- Many, many more features

➔ CALL FOR OUR LOW DISCOUNT PRICING ←

Yacht Boy 400
GRUNDIG
World Receivers
The Ultimate In Digital Technology
Satellit 700

AOR AR8000 AOR AR2700
NEW: **AR8000** & Scout 40 reaction tuning MOD + cable pkg $1039.00
AR2700 and Scout 40 reaction tuning MOD + cable pkg $829.00
Both Fully Warranteed
Free UPS Ground Shipping (48 states)

Optoelectronics
Scout 40 ver. 3.1
$399.95
Call for all Optoelectronics $

Drake
R8A and SW8
Call for discount prices on Drake, Sony, Grundig

Uniden
BC9000XLT
$379.95 delivered UPS Ground (48 states)
Call for all Uniden/Bearcat

Conn Sales 203-667-9479
Infor. & Tech Help 203-666-6227

LENTINI COMMUNICATIONS, INC.
21 Garfield St. Newington, CT 06111
C.O.D.'s OK — SAME DAY SHIPPING
HOURS: M-F 10am - 6pm SAT 10am-4pm

DAIWA CN720B
Back by popular demand...

the famous CN720B SWR/PWR meter. It's handsome styling, all metal construction and easily read face, makes it a great addition.

FREQ: 1.8 - 150MHz
Power range: forward, 20W/200W/2kW
reflected, 4W/40W/400W
Tolerance: ±10% at full scale
SWR detection sensitivity: 4W min.
Input/output connectors: SO-239
Dimensions: 180w x 120h x 130d mm

Electronic Distributors Corp.
325 Mill St. Vienna, VA. 22180
Phone: (703)-938-8105 • FAX: (703)-938-4525
Available at your favorite dealer.

responsible for developing and implementing the bureau's consumer protection programs. The bureau seeks to educate and protect consumers through a combination of education, enforcement and rulemaking. The bureau recommends new rules where appropriate; processes formal and informal complaints against Title II common carriers; conducts investigations and assesses forfeitures and other remedies associated with violations of the Communications Act; and educates consumers and carriers, directly and through the media, about the commission's rules.

The bureau noted throughout the report that educating consumers is a critical component of its successful consumer protection effort. The bureau develops and distributes fact sheets and background information on many issues and also responds to daily media inquiries in an effort to reach consumers.

Consumer complaints and inquiries also have provided the basis for a number of the commission's recent rulemaking proceedings and proposals. This includes new rules adopted with regard to the unauthorized conversion of consumers' long-distance carriers, or "slamming"; proposals regarding the pricing and marketing practices of operator service providers; and a proposal for new rules concerning pay-per-call and dial-a-porn issues.

•Slamming—In the year ending March 1995, the commission received close to 6,000 consumer complaints regarding slamming. To address this growing problem, the commission issued new rules and policies that went into effect Sept. 11, including provisions designed to guarantee that the forms consumers sign to switch their service are clearly identified and that companies that slam consumers don't reap a financial windfall from that action.

•Operator Service Provider Rates—Again in the year ending March 1995, the rates of operator service providers generated more than 4,000 consumer complaints. Here, too, the commission is considering more stringent regulations to better protect consumers. For example, the commission has sought comment on proposals to implement a rate cap and to provide an additional branding message for consumers. These and other proposals being considered would require carriers to better inform consumers about the rates they can except to pay from hotels, airports and other public phone locations.

•Pay-Per-Call and Dial-A-Porn—The commission proposed new rules for pay-per-call and dial-a-porn services. The bureau says it expects to forward a final recommendation for rules to guard against potential pay-per-call abuses. In addition, the Common Carrier Bureau is working closely with the International Bureau to propose actions addressing the emerging problem of international dial-a-porn.

•Other Issues—Other top complaint areas include: carrier marketing and advertising practices, toll fraud, solicitation and international call rates. The bureau is addressing each of these areas through a combination of rulemakings, consumer complaints, conducting investigations and assessing forfeitures, and providing information to consumers and carriers about their respective rights and obligations.

Telephone Consumer Protection Act

The commission finalized its rules implementing the Telephone Consumer Protection Act of 1991 (TCPA), balancing the need to protect consumers' privacy with the fair business practices of telemarketers.

The TCPA restricted using unwanted telephone solicitations, automatic telephone dialing systems, artificial or prerecorded voice messages and using telephone fax machines to send unsolicited advertisements. In 1992, the commission adopted regulations to implement the TCPA.

In the Reconsideration Order, the commission resolved many issues raised regarding the 1992 order. The commission's actions clarify certain critical aspects of the regulations implementing the TCPA and ensure that the costs of privacy protection are not borne by the residential subscriber.

Specifically, the commission:

•Clarified that telephone solicitations made by or on behalf of tax-exempt nonprofit organizations are not subject to the rules governing telephone solicitations.

•Clarified that calls made by debt collection agencies are exempt from these rules.

•Required that do-not-call requests must be maintained for 10 years.

•Clarified that telephone fax machines need not contain a disabling device to prevent transmission without the required identification. Machines manufactured after the effective date of the rules need only provide the capability to clearly mark identifying information of the user. The commission also confirmed that computer fax/modem boards are subject to the same rules as telephone fax machines.

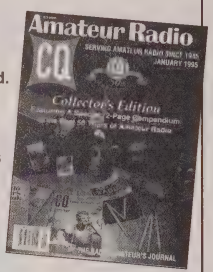
•Clarified that the entity on whose behalf a fax message is transmitted is ultimately responsible for compliance with the rules banning unsolicited fax advertisements. ■

If you enjoy Amateur Radio, you'll enjoy CQ

It's a different kind of ham magazine.

Fun to read, interesting from cover to cover, written so you can understand it. That's CQ. Read and enjoyed by over 90,000 people each month in 116 countries around the world.

It's more than just a magazine. It's an institution.



CQ also sponsors these thirteen world famous awards programs and contests: The CQ World Wide DX Phone and CW Contests, the CQ WAZ Award, the CQ World Wide WPX Phone and CW Contests, the CQ USA-CA Award, the CQ WPX Award, the CQ World Wide 160 Meter Phone and CW Contests, the CQ Five Band WAZ Award, the CQ DX Award, and the highly acclaimed CQ DX Hall of Fame.

Accept the challenge. Join the fun. Read CQ.

Also available in the Spanish language edition. Write for rates and details

CQ The Radio Amateur's Journal	USA	VE/XE	Foreign	
76 North Broadway	1 Year	☐ 24.95	☐ 37.95	☐ 39.95
Hicksville, New York 11801	2 Years	☐ 44.95	☐ 70.95	☐ 74.95
	3 Years	☐ 64.95	☐ 103.95	☐ 109.95

Please start my CQ subscription with the next available issue.
Enclose payment or charge information with order. Term and rate (check one):

Name _____

Address _____

City _____ State _____ Zip _____

( ) Check ( ) M/C ( )VISA ( ) AMEX ( ) Discover

Card # _____ Exp. _____

(Signature required on all charge orders) Please allow 6-8 weeks for delivery of first issue.

Phone 516-681-2922; FAX 516-681-2926

1-800-853-9797 PCDEC95

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Radio Pearl Jam? William Hassig of Illinois heard a WMAQ-TV news report that a pirate radio station was carrying a live broadcast of last summer's Pearl Jam concert from Soldier Field in Chicago, with Pearl Jam's approval. The report didn't mention the station's frequency.

Dick Pearce of Vermont is going to headline the show this month. The lucky guy has logged more pirates recently than some of us manage over several months! Starshine Radio was on 6956.8 upper sideband at 2311 with many '60s and '70s pop/rock songs and brief comments, sometimes with the host singing along. Dick's not sure if this was direct or a relay.

Radio Pirana was heard weakly at 1925 on 13949.8 lower sideband. Dick says he was able to identify the voice of "Jorge," the usual host on this station, but wasn't able to make out anything else.

Free Radio Experience showed at 0015 on 6956.8 lower sideband but was weak and soon signed off. Dick says there were at least two other pirates on frequency at the same time.

Altered States Radio was heard on 6954.9 at 0030, also very weak. A female announcer, some piano music and one ID was all Dick was able to pick out.

Free Radio Experience showed at 0217 on 6956.8 upper sideband. The music and sound effects were clear but the voice audio was muddy. The show included a couple of drinking songs, one about a UFO. The show was dedicated to all those involved with free radio. George Roberts in Pennsylvania reports hearing this one briefly on 6955 at 0310.

WRFW, 6956.8 USB at 0315: Dick says he tuned in late and caught only the last song. The announcer said there was a "whole lot happening" so he was going to sign off and take a bath or sauna. He also said their one "D" cell battery for their 10,000-watt signal was running down.

"We're a Europirate based in the U.K., but I'm German and my name is Mark Jones. Good to have your company. This is a relay broadcast and we are wondering who is listening," Radio Mirage International said on 6955 lower sideband at 2312. Then he played a couple of songs and was lost in static.

Pearce had Freedom 40 on 6956.2 USB at 0010, mixing with two or maybe three others. It was their first anniversary program, a replay of one aired some months previously.

He Man Radio was part of the above mix, in upper sideband at 0034. They played songs such as "The Twist," "Unchained Melody" and "Pretty Woman." The announcer commented on the Freedom 40 station and offered T-shirts for $12. He also said he knew "The Voice of..." was in there so he signed off.

Voice of —, this unidentified was part of the above mixture at 0034 with a long, emphatic tirade about something. He said the broadcast was made possible by Up Against the Wall Radio (UATWR).

UATWR, 6956.3 USB at 0116, was heard with what sounded like a repeat of a show aired some months earlier. It included a spoof about Newt in space. UATWR is "the most fun allowed by the FCC, FBI, IRS, FDA," etc.

Black Rider Radio, 6956.8 USB at 0005, was heard via KDED with show No. 6. They played various types of music and offered a QSL card in exchange for two first-class stamps (no Nixons!) and a picture postcard of "your hometown."

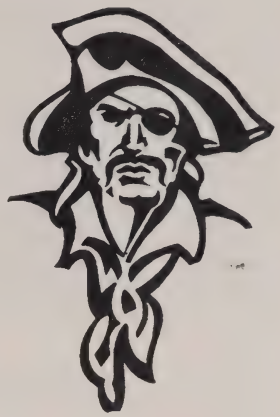
Radio Is Not Radio, 6950.8 USB at 0015, but with what Pearce called a "horrendous" AC hum and rapid up-down drift so severe Dick thinks it may have been intentional.

The Asylum, 6955.7 USB at 0045, was weak and possibly with reverb effects and Dick was only able to pick out the ID.

Northern Music Radio, 6955.05 USB at 0158, was a tough copy here, too, but Dick was able to tell it was a female announcer with a moderate accent. She said she was 16, from Finland and that the show was being relayed by NAPRS.

CSIC, 6956 at 0035, claimed to be "broadcasting from the island of Reunion, off the coast of Africa." Announcer said hello to several stations and featured "Fruit of the Loom Newsbriefs." Great going, Dick!

Dennis Henize of Florida caught his first pirate action when he spent part of a Saturday evening monitoring 6955. He heard Modern Music Radio at 0215 with what sounded like avant garde rock and a DJ who had a European accent and said he was 16 years old. The address given for reports was a P.O. Box (28413?, Ed.) in Providence, RI 02908.



Later, Dennis heard a number of other things on this frequency, such as excerpts from political speeches and unintelligible audio clips. Still later there was something calling itself the Quantum Data (Radio?) Laboratory. They gave P.O. Box 146, Stoneham, MA, as their address. Dennis also heard WREZ briefly, calling another station. A very good first affair, Dennis. Stay in touch!

That takes care of things for this month. Keep those reports and pirate station QSLs coming my way! ■

Back to the Sixties with
RADIO UTOPIA
Medium Wave
YOUR Wave!
For more information please write to:
P.O.box 73, 7160 AB Neede, The Netherlands

Don't we all wish for utopia? Or at least a logging of this Dutch pirate station?

BY GERRY L. DEXTER

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

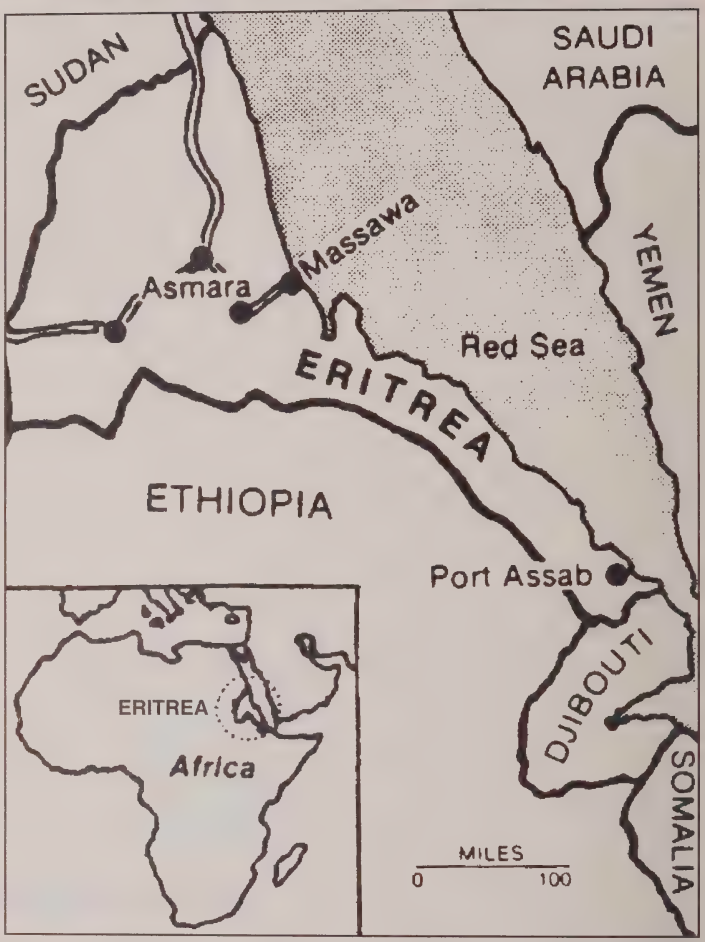
We've received news of a new Nigerian clandestine station that came on the air late in June. The station, Radio Freedom Frequency, carries anti-government slogans and commentaries mixed with programs of revolutionary music. The station begins transmissions after midnight local time with a single announcer who identifies himself only as "better tomorrow." He urges Nigerians to fight for their rights despite Nigeria's military dictatorship. A source within Nigeria's radio regulation ministry believes the station is run by various opposition and pro-democratic groups, although representatives for some of these groups denied responsibility for the broadcasts. Government radio and security agents are trying to track down the station and its operators.

Unfortunately, the story did not mention a transmitting frequency. We'd think, though, that this station is operating on a local mediumwave channel rather than on shortwave. Nonetheless, we send thanks and appreciation to Roy Licklider of New Jersey, who spotted this fascinating information on an online service, pulled it off and forwarded it to us.

It seems that, once again, Saddam Hussein's official Republic of Iraq Radio has clandestine radio opposition using the same name. Republic of Iraq Radio from Baghdad apparently is trying to present itself as the government's domestic radio service. When this station first appeared about four years ago, it announced it was using government-owned transmitters in Egypt, Syria and member states of the Gulf Cooperation Council, but apparently the station is trying harder to appear as the real thing this time. It's been heard broadcasting in Arabic at around 1600, using 9570 and 13675 (this latter frequency also is used by UAE Radio, Dubai—the UAE is a member of the GCC). It also has been spotted on 15133v at 1600.

Radio of the Saudi Opposition from Najid and Hijaz is a new clandestine broadcasting in Arabic at 1300 on 11785 and has the scent of Baghdad about it. Najid and Hijaz are areas of northwest Saudi Arabia. Several anti-Saudi Arabia broadcasts have used the 25-meter band at various times over the past few years, all of them Iraq operations.

Another Iraqi radio game is the Voice of Eritrea, which is reported active during the 1600-1700 time period. It's using 17740 with broadcasts in Arabic and Tigrigna, aimed at the mostly Muslim Tigre people who live within Eritrea. Broadcasts include Islamic prayers, political commentary and Eritrean history. At other times, 17740 carries the Iraqi domestic service.



Eritrea is the target of a new clandestine, apparently originating from Iraq.

One of the transmitter sites of Korean clandestine Voice of National Salvation, broadcasting to the South from North Korea, has been confirmed by a member of the Asian Broadcasting Institute, a Japanese-based DX club. While visiting North Korea, the DXer was able to confirm that one of the transmitters is on a hill near Wosan City in the eastern part of the country. Previous investigations by South Korean authorities had put National Salvation's transmitters at Wosan, Pyongyang and Haeju.

Meanwhile, the Voice of the People, which broadcasts from the South to the North, recently celebrated its ninth year on the air. It announced that it came on the air June 25, 1986.

Clandestine expert George Zeller has been in further pursuit of information about La Voz de Chiapas Libre, which claims to be a mobile clandestine station somewhere in or near the Mexican state of Chiapas. Jay Murley, the spokesman for this station, claims they have received and confirmed some reception reports but would not provide Zeller with specific date, time and frequency information. Indeed, apparently no

one knows what frequencies the station uses (other than it's somewhere in the 41-meter band), or at what hours the station operates. Supposedly, the transmitter is a modified Hammarlund from the early 1950s and has been operated from northwestern Guatemala, as well as Chiapas.

Despite the efforts of the Papua New Guinea army to find and close the station, Radio Free Bougainville still is active, though its transmitter power is too weak to enable us to hear it in North America. During July, Radio Australia reported the station had claimed that the PNG army had launched another offensive against the Bougainville Revolutionary Army. The station's transmitter is said to be powered by coconut oil! The latest available schedule is 0900-1100 on 3850.

Inexplicably, rather than shutting down ineffective TV Marti broadcasts to Cuba, Washington is gong to spend money operating on three new UHF channels, in addition to the VHF channel it is currently using. The signal will be "randomly switched" between channels 18, 50 and 64, in hopes of counteracting Cuban jamming.

Here's another reminder that news about clandestine stations, news clippings, QSL information and the like are always welcome. Please keep clandestine station loggings separate from those for the *Listening Post*. Thank you!

Until next month, good hunting! ■

Timestep

The Weather Satellite System

Images available as often as every 4 minutes.

Full screen color animation of up to 1000 frames.

Direct temperature readout.

Latitude / Longitude and political boundaries.

Easy to use mouse operation.

3D Cloud images.

Automatic operation.

HRPT Image of southern Hudson Bay

If you want to see the world's weather right now from anywhere in the world, including the Americas, Europe, the Middle East, Japan and Australia, then we have a system for you. Watch local weather systems or track hurricanes and tropical storms. We can supply simple systems for beginners or advanced HRPT systems for enthusiasts. All component parts are available separately. Systems and satellites available include HRPT, WEFAX, APT, NOAA, Meteor, Okean, GOES, Meteosat and GMS. Color brochures available.

Spectrum International Inc. PO Box 1084 Concord Mass. 01742 USA
Tel. (508) 263-2145 Fax. (508) 263-7008

Manufactured by: Timestep PO Box 2001 Newmarket CB8 8XB England
Tel. 01440 820040 Fax. 01440 820281

CIRCLE 86 ON READER SERVICE CARD

Pager Decoder Pager Decoder Pager Decoder

Message Tracker 2.0

Call for Information on our Plus and Pro Versions

Decode digital pager messages using your PC and scanner. Adaptor connects to your RS-232 port and audio output jack on scanner. The Message Tracker software program allows you to select various options and features.

Advanced Features Include:

- Decodes FSK Signals
  - POCSAG - 512 1200 2400 baud
  - GOLAY (600 baud)
- Auto Baud Rate Detection
- Handles GOLAY and multi-speed POCSAG modes on same frequency
- Allows option to monitor all messages on channel
- Ability to monitor messages only from your capcode address list
- Output to File with Time Stamp
- Displays both Alpha and Numeric Messages
- Connects to speaker/earphone jack or directly to discriminator output

Starting At **$139.95**

S & H within U.S.: $4
(outside U.S.: $10)
Tx Residents add 8.25% Sales Tax

We currently accept checks and money orders only. Call for latest product and ordering information.

Mail Your Order Today !!!

Name: _____
Addr: _____
City: _____
State: _____ Zip: _____
Phone: _____
E-mail: _____
Message Tracker 2.0 : $ 139.95
S & H: $ _____
Tx Residents:(8.25%): $ _____
Total Purchase: $ _____

K & L Technology
P.O. Box 460838
Garland, Tx 75046-0838

Phone/Fax: 214-414-7198
E-mail: KLTsupport@aol.com

Min. Recommended System : 386

Pager Decoder Pager Decoder Pager Decoder

CIRCLE 8 ON READER SERVICE CARD

AR3030 HF Receiver

AOR offers leading edge technology in receiver design with the introduction of the AR3030!

Unbelievable design & price tag...nothing has been spared! Compare AR3030 features with other receivers costing over $1000...The AR3030 is the winner!

- **Frequency:** 30-kHz-30MHz plus optional internal VHF converter 108-174MHz
- **Memories:** 100 programmable w/ scan
- **Modes:** AM, LSB, USB,CW, FAX, FMN
- **Tuning Accuracy:** 10Hz
- **Dynamic Range:** >100dB @ 25kHz spacing
- **Antenna inputs:** (1) Coax 50Ω unbal. (2) 450Ω bal. (3) Hi-Z for whip
- **IF Output:** 455kHz • **Computer:** RS-232C
- **Power:** 12VDC -800mA (max. audio); 8AA Nicad or Alk (not incl.)
- **Size:** 10"W x 3.5"H x 9.5"D; 4.8 lbs.

AOR

Electronic Distributors Corp.
325 Mill St. Vienna, VA. 22180
Phone: (703)-938-8105 • FAX: (703)-938-4525
Available at your favorite dealer.

CIRCLE 1 ON READER SERVICE CARD

SCANNING VHF/UHF

BY J.T. WARD

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

While this is our December issue, it hits the newsstands and mailboxes in plenty of time to shop for holiday gifts for your favorite scanner listener. To kick off this month's column, here are a couple of inexpensive gift ideas you might not think of:

•A chrome metal belt clip for the AOR AR-1000 scanner: This clip is a perfect fit to replace the fragile plastic belt clips used on many RadioShack scanners, including the popular Pro-43. It's available through EDCO, (703) 938-8105, for $3.55, including shipping.

•Metal bookends: Inexpensive and available at any office supply store, bookends make great stands for many handheld scanners. Just slip the scanner's belt clip over the vertical part of the bookend and *voila,* no more tipsy scanners. About $3. Add an AC adapter, a telescopic whip antenna and an external speaker, and it's hard to tell your handheld from a base scanner.

•Airport Facilities Directory: This government publication lists every VHF/UHF radio frequency used by air traffic controllers and pilots at every licensed airport and Air Route Traffic Control Center in the nation. And because it's updated every 56 days, the information always is the latest available. Most airports with a general aviation facility that carries pilot supplies will sell it, and it's a real bargain at about $5.

A Realistic Change

Lou Olesvay Jr. of East Brunswick, N.J., wrote to say that when he attempted to perform a published modification to open up the 800-MHz band on his RadioShack Pro-2030 scanner, he found the radio's circuit board to be different than described in the published procedure.

"First, there is no jumper L201—just a blank spot on the printed circuit board where it should have been. But there is a new spot marked X201, which has a diode in that spot," Lou wrote.

"Do you know, or does anybody out there in the scanner world know if RadioShack modified this design on this scanner to prevent the simple, but effective modification?"he asks.

Good guess, Lou! According to a RadioShack spokesman, the design of the model Pro-2030 scanner was changed during March 1994. The change was implemented to bring the radio into compliance with federal law that made it illegal after April 26, 1994, to manufacture or import scanners readily modifiable or capable of receiving cellular telephone frequencies.

Nearly all existing RadioShack scanner models capable of cellular modification underwent similar design changes in late 1993 or early 1994—usually in March or April, the spokesman said.

There's an easy way to tell when your RadioShack (Realistic) scanner was made. On the back or bottom of the radio there should be a small sticker with two numbers and a letter, i.e., 3A4. The first number indicates the month of manufacture, while the second is the last digit of the year. In this case, March 1994. The center letter is a place holder with no significance.

Sorry, Lou. I don't know of a procedure to restore the cellular frequencies in your scanner. If you come up with one, be sure to let the rest of us know.

Quad Cities Check-In

Frank Whitmore, N9DIZ, of Davenport, Iowa, says he's been scanning for about five years, and he's been a ham since age 13.

"My scanning experience started as a job-related necessity," Frank says. "My private-security position requires very frequent interaction with as many as 15 police departments in the area. I found it to our mutual advantage to monitor these agencies so our efforts could be better coordinated. Some local cops even monitor my security agency's frequency on a regular basis."

Frank says he uses RadioShack Pro-43 and Pro-2026 scanners, as well as a Uniden Bearcat BC560XLT. He passes on this programming tip:

"Imagine a map of your local area, and where each agency's headquarters/dispatchers are. Now superimpose this imaginary map over the keyboard of your scanner. The agency in the northwest corner of your map would be programmed into bank one of your scanner. The agency in the northeast corner would be in bank three, etc. Leave Bank 10 (or whichever) constantly scanning mutual aid and emergency-only frequencies.

"This makes it very easy when traveling to switch from one agency to another whenever you cross into a different jurisdiction," he said.

Davenport is part of an area known as the Quad Cities, even though, as Frank points out, there are actually five or six cities in the area. He sent along these favorite frequencies:

Davenport, Iowa, police F1, 460.125; police F2/F4, 460.150; police F3, 460.275; fire F1, 460.575; fire F2, 460.600.

Bettendorf, Iowa, police F1/F2, 460.450; police F3/F4, 460.425; fire F1, 155.805; fire F2, 155.250.

Rock Island, Ill., police F1, 460.250; police F2, 460.550; police F3, 155.610; fire, 154.340.

Moline, Ill., police F1, 460.300; police F2, 460.400; police F3, 155.130; fire, 154.310.

East Moline, Ill., police, 460.025; fire, 154.010.

Scott County, Iowa, sheriff's F1, 156.210; sheriff's F2, 155.850; sheriff's F3, 155.415; fire, 154.220.

Rock Island County, Ill., sheriff's F1, 159.150; sheriff's F2, 155.715; sheriff's F3, 154.980; fire, 154.265.

Milan, Ill., police F1, 154.815; police F2, 155.775; fire, 154.190.

"I honestly think that there's nothing more exciting than listening to a high-speed chase romp through your neighborhood," Frank says. "Except if you're the one doing the chasing. That's why I now volunteer as an auxiliary police officer."

Todd Fletcher of Edmonton, Alberta, Canada, shows off his first scanner, a Realistic Pro-31 10-channel handheld model. Todd's father, Trevor, is a frequent contributor to this and other columns in Popular Communications.

SUBSCRIBE TODAY!

❒ Sign me up for 12 issues of CQ VHF at the special introductory price. **Only $19.95**

❒ Sign me up for 12 issues of CQ VHF and 12 issues of CQ magazine, and send me my 1996 CQ Equipment Buyers Guide FREE as a gift. **Only $44.90**

(Please Print Clearly)

My CQ magazine is a ❒ RENEWAL ❒ NEW SUBSCRIPTION

SEND TO:

Name _____

Address _____

City _____

State _____ Zip _____

Country _____

☐ Check or Money Order Enclosed

☐ MasterCard ☐ Visa

☐ American Express ☐ Discover

Account Number : _____

Expiration date: _____

Signature _____

Free gift offer only applies to the combination plan offer.
Please allow 4-6 weeks delivery.

International Subscription Rates (all rates are quoted and payable in U.S. currency) : Canada/Mexico-CQ VHF **$29.95** ($19.95 + $10.00 postage), Combo/CQ VHF and CQ magazine **$67.90** ($44.90 + $23.00 postage). Foreign-CQ VHF: Surface **$31.95** , Air **$79.95**, Combo/CQ VHF and CQ magazine: Surface **$74.90**, Air **$164.90**.

2 C P C

FOLD HERE

IMPORTANT: BE SURE TO ENCLOSE YOUR CHECK

thank you for your order

DID YOU KNOW YOU CAN ORDER TOLL FREE?

800-853-9797

RUSH!

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 2055 HICKSVILLE, NY 11801

POSTAGE WILL BE PAID BY ADDRESSEE

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

RETURN ADDRESS (Please Print)

NAME _____

ADDRESS _____

CITY _____

STATE _____ Zip _____

When sealing, please do not cover shaded area

CQ VHF Ham Radio Above 50 MHz

76 North Broadway
Hicksville, NY 11801-9962

introducing...

CQ VHF Ham Radio Above 50 MHz

NEW!

Something this good could only come from the publishers of CQ ...

A NEW magazine for all ham radio operators who are active or interested in operating on the amateur bands above 50 MHz!

In every issue you'll find...

- Operating articles
- Technical articles
- Beginner's articles
- Product reviews
- Projects you can build
- New things to try
- News and Columns

and topics like...

- Repeaters & FM
- Packet radio
- Amateur satellites
- Amateur television
- VHF/UHF "weak signal"
- and much more!

12 great issues **ONLY ~~$21.95~~**

$19.95 *Introductory price*

SUBSCRIBE TODAY *and receive the premiere issue!*

TAKE ADVANTAGE OF THIS SPECIAL COMBO OFFER!

Here's what you get:

BONUS!

12 issues of CQ VHF at the introductory price (regular subscription rate $21.95)	$19.95
12 issues of CQ The Amateur's Radio Journal (this offer can be used on renewals)	$24.95
The 1996 CQ Equipment Buyer's Guide	FREE ($5.95 value)

GET ALL THREE! ONLY $44.90

ORDER TOLL FREE! 800-853-9797

Or to order by mail, use the order form and the postage paid return envelope in this issue.
CQ Communications, Inc. 76 North Broadway Hicksville, New York 11801
FAX (516) 681-2926

Educational Channels

Stephen Behr of Riverside County, Calif., says the county's Moreno Valley Unified School District uses both low-power VHF and UHF frequencies.

"I was surprised to find them in the VHF band," Stephen says. "During high school graduations, VHF frequencies were very busy. The same frequencies are used by campus supervisors during normal school days. The MVUSD has several year-round schools that keep up the activity level on all their communications frequencies."

Stephen lists 154.570, 154.600, 464.525, 464.675 and 464.8375 as active for the school district.

He uses Icom IC-R100 and AOR AR-900 scanners.

Activate Your Scanner

As a follow-up to last month's column, Michael Iszak offers a way to use a non-voice-activated tape recorder with your scanner while only recording during active transmissions. He calls it his "$5-$10 Scanner Activator."

"First, I used an AC voltmeter to measure the (audio) output of my scanner, adjusting the volume to get an appropriate output," he says. "I then skipped down to my local RadioShack, and bought a relay that matches the scanner's output. I recommend the ones that vary between 7 and 9 volts, as when there is modulation in the signal there is a bit of voltage flickering.

"I then got a silicon diode (any general purpose one will do) and hooked that onto the (coil) terminal on the relay and connected the other end to a jack that would fit the scanner. "Then I connected the remaining terminal (coil) to the other side of the plug. I then connected another plug in the same fashion (before the diode only!).

"Next I got the terminal on the relay that made a closed circuit (or whatever the tape recorder's format is) and connected the terminals to the "remote" port on the tape recorder.

"I plugged the cords in their correct place, tuned in the NOAA weather broadcasts, and guess what? The tape recorder started when I turned the scanner on, and stopped when it was silent again."

I guess if you want to monitor the sound, you could get some kind of Y adaptor to have two plugs in one.

Thanks for the tip, Michael. I'm sure many readers will find it worthwhile.

Favorite Frequencies

Frank Fowler of Montgomery County, Md., says he enjoys *Popular Communications* every month. He's a licensed amateur radio operator who sent in some of his favorite scanner frequencies:

McDonald's drive-up window (Glenmont), 154.570; Syscomm—Maryland State Police helicopters, 44.74; Wheaton Volunteer Rescue Squad, 462.650; Wheaton Plaza security, 464.825; White Flint Mall security, 463.900; Montgomery County fire dispatch F2, 154.160; Montgomery County fireground F1, 153.950; and Montgomery County police (Glenmont) F4, 495.3125.

Doing Disney

With the holidays coming up, many families will be taking a Florida vacation at Walt Disney World. Mike Mollet, N2SRO, of Pitman, N.J., sent in a list of frequencies used in and around the theme parks.

"I was down at Walt Disney World a few years ago, and personally know that these frequencies were in use by the different agencies (at that time)," Mike says. "I figured *Popular Communications* readers could benefit from this information."

EPCOT security, 463.750; EPCOT trouble desk, 462.675; EPCOT Center entertainment, 462.550.

Magic Kingdom security, 464.400; Magic Kingdom operations, 450.0625; and Magic Kingdom trouble desk, 464.625.

Disney World security, 464.125; Disney World fire, 453.875; Disney World fire, 453.925; Disney World ambulance, 453.825; Disney World submarines, 151.895; Disney World operations, 461.600; Disney World parade coordination, 462.775; Disney World parade coordination, 462.850; Disney custodial service, 463.975; and Disney World utilities, 462.475.

MGM Studios operations can be heard on 461.700 and 464.800. The famous Disney monorail uses 462.575. Hotel guests can monitor Travelodge International on 151.655; Hilton Hotel on 154.625; and Buena Vista Hotel on 157.740.

Mike also said that he's the captain of his local Police Explorers Post.

"Our county (Gloucester) recently switched over to the 500-MHz band. As a result, the local ambulance squad, fire companies and Police Department have been eager to get rid of their VHF walkie-talkies. The Explorers just received a donation of radios from the ambulance squad and Police Department, and it's worked out great," he says.

Mike said the Explorers use the donated radios when acting as first responders to medical emergencies, or when assisting the police by directing traffic. They've even loaned a radio back to the police when an officer's new 500-MHz radio died.

Help Received

And finally, as another example of the good deeds that occur because of the scanning hobby, let me tell you about an incident that I was involved in recently.

I was at home on a Sunday afternoon, monitoring the local Air Force and Coast Guard frequencies as I usually do, when I heard the captain of a pleasure boat calling for help on the marine VHF distress frequency, 156.800 MHz. After calling several times with no answer, the captain transmitted "in the blind" that he was aboard a 24-foot cabin cruiser and that the boat's gearbox apparently had failed, leaving the boat adrift in Tampa Bay.

As it was clear that the Coast Guard station in St. Petersburg couldn't hear the distress calls, I telephoned the duty officer there and described what I'd heard.

By switching antennas, the radioman on duty was able to establish contact with the stricken boat, and within a few minutes help was on the way.

No one was in immediate danger and overall this was a minor incident as rescues at sea go, but my old Boy Scout leader would've been proud.

Licensed amateur radio operators have a long tradition of helping others in distress. There's no reason scanner listeners can't do the same. If the situation presents itself, get involved!

Write In

Keep those cards and letters coming, folks. Reading about the neat ways in which many of you practice your scanning hobby makes this job fun! And don't forget to include photographs of your monitoring post or interesting uses of VHF/UHF communications systems.

Send your letters to J.T. Ward, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, NY 11801-2909. GEnie online subscribers may contact me directly by addressing e-mail to JTWard; via the Internet, send e-mail to JTWard@genie.geis.com. ■

GMRS
EMERGENCY
Radios

• Hiking • Fishing
• Skiing • Camping
• Traveling • Hunting
• Personal communications

MAXON
GMRS-210+3
2-5 Watt portable
NOW Only $ 195.00

SM-4450
40 Watt 16 Ch mobile
NOW Only $ 350.00

Many other accessories available for these radios: headsets, mobile antennas, speaker/mics and more.

GMRS RADIO SALES
P. O. Box 37825
Phoenix, AZ 85069
1-800-571-GMRS
Fax: (602) 878-6398

CIRCLE 66 ON READER SERVICE CARD

SCANNER WORLD, USA®

"The Largest Dealer of Scanners in the World"

Scanner World, USA®

Est .1967
Same Location
Over 20 years

10 New Scotland Ave., Albany, NY 12208

518-436-9606

Featuring Uniden Bearcat Scanners, CB Radios, Relm Two Way Radios, Complete Line Of Accessories, Antennas, Rechargeable Batteries, Books, Power Cords, Carry Cases.

All Scanners In Stock for Same Day Shipping

Model #	Scanner World Price	Shipping Each
BEARCAT		
BCT7	199.99	7.00
BC60XLT	109.99	7.00
BC70XLT	99.99	7.00
BC80XLT	174.99	8.00
BC120XLT	139.99	7.00
BC144XL	79.99	7.00
BC148XLT-1	96.99	7.00
BC150B Black	159.99	8.00
BC150Y Yellow	159.99	8.00
BC170XL	99.99	7.00
BC178XLT	134.99	7.00
BC220XLT	239.99	8.00
BC560XLT	82.99	7.00
BC700A	199.99	7.00
BC760XLT	249.99	7.00
BC350A	94.99	7.00
BC400XLT X	93.99	7.00
BC855XLT	149.99	8.00
BC860XLT	149.99	8.00
BC890XLT	259.99	9.00
BC2500XLT	309.99	10.00
BC3000XLT	374.99	10.00
BC8500XLT	299.99	10.00
BC9000XLT	394.99	10.00
COBRA		
SR900	89.99	7.00
SR901	72.99	7.00
REGENCY *(limited supply)*		
580XLT	159.99	7.00
590XLT	199.99	7.00
R4010	99.99	7.00
R4020	159.99	7.00
MX7000	249.99	9.00

SC-150 SPORTCAT

$159.99

GM1A™ Glass Mount Scanner Antenna

Made in USA

$39.99

GRE
800 MHz Converters
-IN STOCK-
Call For Price

CALL
FULL LINE SCANNER CATALOG
The only catalog devoted specifically to scanners in the USA. Large 54 pages with all the information you need!

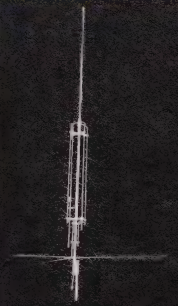
—IF YOU CAN'T FIND WHAT YOU WANT, GIVE US A CALL, WE MAY HAVE WHAT YOU WANT—

ORDERING INFORMATION: Call (518) 436-9606 to place orders or mail orders to Scanner World, USA®, 10 New Scotland Ave., Albany, N.Y. 12208. Orders will be shipped within 24 hours by United Parcel Service if order is accompanied by MasterCard, Visa, cashier's check, money order, COD (COD shipped by United Parcel Service will be cash only). (If a COD package is refused, customer will be billed for shipping and COD charges.) Mail orders with personal or business checks enclosed will be held 4 weeks for bank clearance. Prices, specifications, and terms subject to change without prior notice. If items are out of stock we will back order and notify you of delivery date. All shipments are F.O. B. Scanner World ® warehouse in Albany, N.Y. We are not responsible for typographical errors. All merchandise carries full manufacturer's warranty. Bid proposals and purchase orders accepted from government agencies only. Free full line catalog mailed 4 times per year. Merchandise delivered in New York State add your local sales tax. No returns accepted after 7 days of merchandise receipt * Add ($) per item and $4.00* for all accessories ordered at same time. COD orders will be charged an additional $5.50 per package. Full insurance is included in shipping charges. All orders are shipped by United Parcel Service to street address only. (No. P.O. Box) Shipping charges are for the 48 continental US States only. Alaska, Hawaii and all others ask for quote on shipping charge. FAX #518-465-2945.

CIRCLE 124 ON READER SERVICE CARD

GAP: The Perfect Antenna

We at GAP realize there isn't a perfect antenna. No singular antenna will scream DX on 80 and be the best for local nets on 10. If anyone tells you there is, beware! The perfect antenna does not exist, but the right one for you may. If you want something to bust the pile on the low bands, then consider the Voyager. Just starting out in ham radio and need a great general coverage antenna, the Challenger is easy to assemble and for little effort will yield superior performance, especially on DX. Maybe you knowingly or unknowingly moved into one of those "restricted areas" where the Eagle's limited visibility, but unlimited ability is desired.



Eagle DX

Challenger DX

Voyager DX

This chart helps you select the right GAP antenna. When comparing GAPs, bandwidth is not a concern. With few exceptions, a GAP yields continuous coverage under 2:1 for the **ENTIRE BAND**.

All antennas utilize a GAP elevated asymmetric feed. A major benefit is the virtual elimination of the earth loss, so more RF radiates into the air instead of the ground. This feed is why a GAP requires **NO RADIALS**. Just as elevating a GAP offers no significant improvement to its performance, adding radials won't either, making set up a breeze.

A GAP antenna has no traps, coils or transformers. This is important. The greatest sources of failure in multiband antennas are these devices. Perhaps you heard someone discuss a trap that had melted, arced or became full of water. Improvements to these inherent problems are the focus of the antenna manufacturer, while the basic design of the antenna remains unchanged. **GAP improved the trap by eliminating it!** Removing these devices means they don't have to be tuned and, more importantly, won't be detuned by the first ice or rain. The absence of these devices improves antenna reliability, stability and increases bandwidth.

Another major advantage to a GAP antenna is its NO tune feature. Screws are simply inserted into predrilled holes with a supplied nutdriver.

The secret is out and people in the know say:

CQ–"The GAP consistently outperformed base-fed antennas...and was quieter."

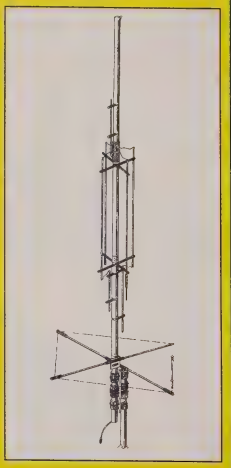
73–"This is a real DX antenna, much quieter than other verticals."

RF–"To say this antenna is effective would be a real understatement. Switching back and forth on 40m between another multiband HF vertical and the GAP, there was no comparison. Signals were always stronger on the GAP, sometimes by S units, not just DB's."

Worldradio – "These guys have solved the problem associated with verticals. That is, an awful lot of RF is wallowing around and dropping into the dirt instead of going outward bound. A half-wave vertical does need radials if it is end fed (at the bottom). But the same half-wave vertical does not (as much, hardly at all) if is fed in the center."

IEEE–"Near field and power density analyses show another advantage of this antenna (asymmetric vertical dipole): it decreases the power density close to the ground, and so avoids power dissipation in the soil below it. The input impedance is very stable and almost independent of ground conductivity. This antenna can operate with high radiation efficiency in the MF AM standard broadcast band, without the classical buried ground plane, so as to yield easier installation and maintenance."

New Release: TITAN DX



This all purpose antenna is designed to operate 10m-80m, WARC bands included. It sits on a 1-1/4" pipe and can be mounted close to the ground or up on a roof. Its bandwidth and no tune feature make it an ideal antenna for the limited space environment as well as a terrific addition to the antenna farm.

MODEL	BANDS OF OPERATION											HT	WT	MOUNT	COUNTER-POISE	COST
	2m	6m	10m	12m	15m	17m	20m	30m	40m	80m	160m					
Challenger DX	■	■	■	■	■		■		■	■		31.5'	21 lbs	Drop In Ground Mount	3 Wires @ 25'	$259
Eagle DX			■	■	■	■	■		■			21.5'	19 lbs	1-1/4" pipe	80" Rigid	$269
Titan DX (Just Released)			■	■	■	■	■	■	■	■		25'	25 lbs	1-1/4" pipe	80" Rigid	$289
Voyager DX							■		■	■	■	45'	39 lbs	Hinged Base	3 Wires @ 57'	$399

GAP ANTENNA PRODUCTS INC.
6010 N. Old Dixie Hwy.
Vero Beach, FL 32967

TO ORDER, CALL

(407) 778-3728

DISCOVER VISA MasterCard COD

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

For those of you trying to keep an ear tuned to the on-going Balkans war, here's a look at best-bet times and frequencies for English broadcasts from this area:

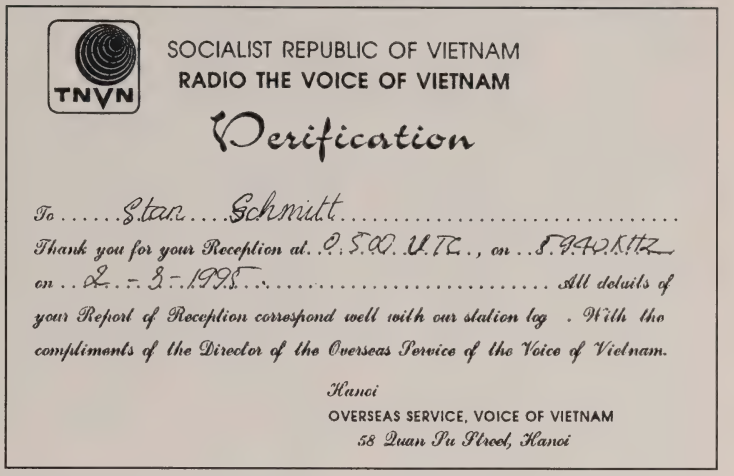
Radio Bosnia-Hercegovina: 7105 (in AM) or 7108 (USB) (not simultaneously) relays a 612 kHz mediumwave service. Most of this is in Serbo-Croat, but there should be newscasts in English at 2130 and 0000. Unfortunately, Deutsche Welle uses 7105 at various times of the day and, to add to the confusion, at least some of the DW schedule is in Serbo-Croat!

Croatian Radio: is using 5895, 7370, 11685 and 13830, with English language newscasts at the beginning of each hour, from 2200-0500.

Serb Republic Radio: English is aired at 0000-0030 and 0430-0500 on 9580 and 11870. Broadcasting, like the overall situation in this forlorn area, is subject to frequent changes.

Shortwave broadcasts to Europe are going to be phased out by both the Voice of Germany and Radio Sweden over the coming year or so. DW is moving to satellite transmissions for its European audience. Europeans may lose VOA-Europe, too. Washington has ended funding for the service. The VOA is hoping to find a private syndicator to take up the slack but, if not, VOA-Europe probably will be a goner.

Adventist World Radio has received an approval from the government to build its new station in Paraguay. But construction on the shortwave station, which will have two 50-kW transmitters, won't start until a license also is issued for the mediumwave and FM stations also planned by AWR. The station will be located near the capital, Asuncion.


SOCIALIST REPUBLIC OF VIETNAM
RADIO THE VOICE OF VIETNAM

Verification

To ..... Stan ..... Schmitt .....

Thank you for your Reception at ..0.500..U.T.C., on ..5.940.KHz on ..2.-.3.-.1995..... All details of your Report of Reception correspond well with our station log . With the compliments of the Director of the Overseas Service of the Voice of Vietnam.

Hanoi
OVERSEAS SERVICE, VOICE OF VIETNAM
58 Quan Su Street, Hanoi

This QSL from the Voice of Vietnam confirms reception of the station via its Russian relay. (Thanks to Stan Schmidt, Evansville, IN)

Ecuador

There's a new religious station on the air in Ecuador. Radio Buen Pastor is operating on 4830 (slightly variable). It is intended as a service to the Saraguro Indians of that area, running 1 kW with an initial schedule of 1000-1100 and 2200-0100. Anyone familiar with the 60-meter band will notice how bad a frequency choice this is, at least for our purposes (with Radio Tachira on 4830 and others nearby). Even worse, the station's antenna system is designed to keep the signal focused on the target area. You may find this one is a bit more challenging to pick up than many of the other Ecuadorians. The address is Radio Buen Pastor, c/o O.M.S. International, Saragura, Provincia Loja, Ecuador.

In other news, both Radio Oriental on 4780 and Radio Progresso on 5060v have been reactivated. And Emisora Gran Colombia also may have returned by now—on 4960, rather than 4910, its old frequency.

Three Notes From Africa

Radio Mozambique has reactivated its 3210 frequency that carries the national program. When conditions cooperate, you can log this from 0250 sign-on.

ELWA in Liberia will increase its power to 50 kW, once it installs a donated transmitter from FEBC—the one once used by now silent KGEI. They hope to go on the air by the end of the year.

Operations from the various regional stations in the Cameroon have been very spotty over the past couple of years.

But the outlet at Douala is reported active again on 4795. Word has it that this is the only Cameroon shortwave station on the air. We don't know whether the Douala station is using its full 100 kW or not. Check for a 0430 sign-on in French.

Finally, Radio New York International, the program on WWCR produced by the people who had the shipboard pirate station of the same name, has gone off the air due to a lack of audience response after a run of only a couple of months.

Your input is always sought and always welcome. Your shortwave broadcast sta-

The Voice of Free China is a great one for giving goodies to its listeners, including attractive stickers. (Thanks to Jill Dybka, Nashville, TN)

English Program Service 2

Time \ Day	Mon	Tues	Wed	Thur	Fri	Sat	Sun
00-10	News						
10-15	News Commentary						
15-30	Mon : Seoul Calling					From Us To You	Shortwave Feedback
	Tues : Korean Cultural Trails						
	Wed : Pulse of Korea						
	Thur : Let's Learn Korean						
	Fri : Globalizing Korea						

Region	UTC	MHz
Europe	22:00-22:30 (BBC Skelton Relay)	5.965
North America	10:30-11:00 (RCI Sackville Relay)	11.715
Southeast Asia	12:30-13:00	9.570 13.670
General Service	12:30-13:00	9.640

Satellite Service(WRN Network 1)

Astra 1-B (Europe)	09:00-10:00 UTC	11.538 GHz VH-1, TR 22 Vertical audio subcarrier 7.38 MHz
Galaxy 5 (North America)	04:00-05:00 EST 21:30-22:30 EST	3.820 GHz WTBS, TR 06 Vertical audio subcarrier 6.80 MHz

Tel : (82) - (2) 781 - 3728, 3729, 3735
Fax Number : (82) - (2) 781 - 3799

English Program Service 1

Time \ Day	Mon	Tues	Wed	Thur	Fri	Sat	Sun
00-15	News						
15-20	News Commentary						Echoes of Korean Music
20-40	Seoul Calling				Let's Sing Together	Discovering Korea Korean Literary Corner	
40-45	Economic News Briefs						
45-60	Mon : Tales from Korea's Past					From Us To You	Shortwave Feedback
	Tues : Korean Cultural Trails						
	Wed : Pulse of Korea						
	Thur : Let's Learn Korean						
	Fri : Globalizing Korea						

(Effective April 3, 1995)

Time/Freq. Schedule

Region	UTC	MHz
Europe	08:00-09:00 16:00-17:00 19:00-20:00 21:00-22:00	7.550, 13.670 6.480 6.480 6.480, 15.575
North America	01:00-02:00 06:00-07:00	11.810 7.205
South America	01:00-02:00	15.575
Middle East & Africa	12:00-13:00 16:00-17:00	7.285 9.515, 9.870
General Service	16:00-17:00 19:00-20:00	5.975 5.975, 7.275

(Effective Mar. 26, 1995)

Radio Korea International's worldwide shortwave schedule. (Thanks to Jill Dybka)

tion loggings should be listed by country, with your last name and state abbreviation indicated after each item. Please leave room in between so we can cut and sort. Also needed are spare QSL cards and photos of you and your listening post, station schedules, brochures and pictures, QSL news (addresses, requirements, etc.) and general SWBC news. Your help allows others to enjoy this great hobby more!

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e., 0000 UTC equals 7 p.m. EST, 6 p.m. CST, etc. The language broadcast is assumed to be English (EE) unless noted by other abbreviations such as SS (Spanish), AA (Arabic), etc.

ALASKA—KNLS, 9615 at 0800 with IS, ID, Christian music, a VOA Europe feature called "Creation Moment," and an offer of a free Bible. (Lamb, NY)

ALGERIA—Radio Algeria Int'l, 15160 in EE with ID, frequency information, address, music. Lost at 1804. (Jeffery, NY) 1830 in EE with news, pops, "Algerian Business Review," frequencies, address. //9535. Into SS at 1900. (Rausch, NJ)

ANTIGUA—Deutsche Welle relay, 9700 in SS at 0018, 15410 in GG at 2354, 17715 at 1650 in GG. (Williams, TX)

BBC relay, 6110 with English by Radio at 2345. (Jeffery, NY)

ARGENTINA—RAE on 9690, man and woman in PP to Brazil. (Wms, TX)

ARMENIA—Voice of Armenia—a new name for Radio Yerevan—11920//11960 at 2038 in EE with "The Newsline," IDs, Armenian pops, arts feature about tapestries, IS and off at 2059. (Lamb, NY)

ASCENSION ISLAND—BBC relay, 9560 at 2251 in PP, 11765 at 2320 in EE/PP, 17830 to Central Africa at 1655, 21660 at 1659 ending sports, then announced they were switching to 3255, 6005 and 17890, and off at 1700. (Wms, TX) Americas program stream at 2000 on 11750. 17830 African stream at 2018. (Jeffery, NY) Dave has been studying the BBC's new "stream" transmission line-up. He's found these for Africa: 1400-1600 on 17830; 1600-1700 on 17830 and 21660; 1700-2100 on 17830 and 2200-2300 11835, all via Ascension. (Jeffery)

VOA relay, 15225 at 1628 to South Africa. (Wms, TX)

AUSTRALIA—Radio Australia, 9710 at 1333 in CC. (Wms, TX)

AUSTRIA—Radio Austria Int'l, 9655 at 0015 in GG, 9870 at 2309 in GG and 0036 in SS, 13730 at 0110 in GG. (Wms, TX) 9655 at 0144. Into SS at 0155. (Wilden, IN)

BELGIUM—Radio Vlaanderen Int'l, 9925 in Dutch at 2013 with rock, news, ID, presumed DX program. (Lamb, NY)

BOLIVIA—Radio San Miguel, 4924.4 at 0120 with commercials, *communicados*, religious talk, ID at 0230. Drifted to 4925.1 by 0255 sign-off. (Rausch, NJ)

BOTSWANA—VOA relay, 7415 at 2002 with African Service. ID, "Weekend Radio" with African news. (Lamb, NY)

BRAZIL—Radio Cancao Nova, 4825 in PP at 0240, two women reciting prayers, ID at 0300. (Rausch, NJ)

Radio Anhanguera, 4915 in PP at 0010 with ID, address, commercial for *Pochahantas* movie. (Rausch, NJ)

Radio Bandeirantes, 9645 at 2255 in PP. Weak. (Wms, TX)

Radio Nacional Amazonia, 11780 in PP at 2322. (Wms, TX)

BULGARIA—Radio Bulgaria, 11660 at 0054 in

Part of the antenna installation at Radio Canada International's Sackville, New Brunswick, site. (Gary Hubert, Ontario)

Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

Bulgarian and 2314 in SS. Also at 1559 with IS, sign-on and into Bulgarian. Also 11720 at 2318 in EE. (Wms, TX) 11720 at 0420 with listeners' letters and local music. (Wilden, IN)

CANADA—Radio Japan relay 5960 at 0126 with language lessons. (Wms, TX) At 1428 with "Media Roundup" program, mailbag, IDs, //9535//15335 at 1500. (Pappas, SD)

Radio Korea Int'l, via Canada, 11715 at 1030 with ID, schedule, site ID, news and "Shortwave Feedback." (Lamb, NY)

Radio Canada Int'l, 9755 at 0106 with news. 15325 at 2012. (Wilden, IN) 0024 in FF, 13670 at 0110, 15305 in SS at 2351. (Wms, TX)

COLOMBIA—Caracol, 5075 at 0125 and 6150 at 0135, both in SS. (Wms, TX)

COSTA RICA—Faro del Caribe, 9645 at 1330 in SS, "Lord's Prayer" sung in SS. (Wms, TX)

Adventist World Radio, 9725 at 1334 and on 13750 at 1306, both in SS. Also the latter frequency in EE at 2338. (Wms, TX)

Radio Exterior de Espana relay, 9630 at 1330 and 11815 at 1606, both in SS. (Wms, TX)

RFPI, 7385 in SS at 0004. (Wms, TX)

CROATIA—Croatian Radio, 5895//7370//11685//13830 at 2111 in Croatian with pops, talks, IDs, IS. EE news after 2200 is at :00 and :50 after the hour. 11635 goes off at 2259. (Lamb, NY)

CUBA—Radio Havana Cuba, 9820 at 0218, 11760 at 0001 with IS and Cuban national anthem, into SS. (Wilden, IN) 2151 in SS to Europe. (Pappas, SD)

Radio Rebelde, 5025 in SS at 0124 with soccer. (Wms, TX)

CYPRUS—BBC relay, 9580 at 0013. (Wms, TX)

USER FRIENDLY!

THE BRAND NEW **1996 POPULAR COMMUNICATIONS GUIDE** IS HERE!

$5.95 $2.50 s h

EXPERT answers to your communications questions: shortwave, scanning and MUCH more!

FREQUENCIES–TIPS–HOW-TO–PRODUCTS

Let the Radio Experts Be Your Guide

What's News and Where To Hear It
THE reference for SWLs who want to tune the world's hot spots

ACARS–The latest report for scanner users wanting to tune Aircraft Communications Addressing and Reporting System digital traffic.

How to fill your mailbox with QSL's

Numbers Stations–They're still there
here's an in-depth look at this radio mystery!

Our Exclusive exhaustive manufacturer/dealer listing

PLUS—comprehensive communications product listings A to Z: Re-ceivers, scanners, CB radios and GMRS (General Mobile Radio Service). Prices, photos and specifications are ALL AT YOUR FINGERTIPS.

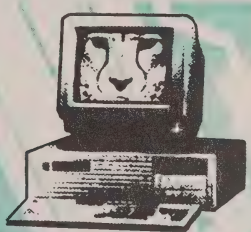
Bonus Aritic1es: Tuning the Federal Emergency Management Administration AND how YOU can safely become the extra eyes and ears for law enforcement with your scanner!

Make the 1996 Popular Communications Guide an integral part of your communications library

Popular Communications
76 North Broadway, Hicksville, New York 11801 FAX 516-681-2926
Order Toll-Free 1-800-853-9797

CIRCLE 11 ON READER SERVICE CARD

SCAN CAT GOLD



You can spend a lot more $$$, but you'll never find a better value than SCANCAT. Tested by Hams and SW listeners like you who own the equipment we support. The results? SCANCAT 6.0 and SCANCAT GOLD are faster and has many new features.

SCANCAT allows you to:

Enter any one frequency and increment up-down from that point • Enter any two freq. and scan between them with any increment, time delay or pause • Scan a file of freq., search by description or wildcards • Create databases of frequency files

Contact your favorite dealer!!!

Distributed by...
Electronic Distributors
325 Mill St. Vienna, Va. 22180
703-938-8105 • FAX 703-938-4525
EXCLUSIVE DISTRIBUTOR THROUGHOUT THE U.S., CANADA, AND SOUTH AMERICA.

CIRCLE 2 ON READER SERVICE CARD

ECUADOR—HCJB on new 5900 at 0754. (Lamb, NY) 11960 in SS at 1316, 12005 at 1317, 15140 at 1619. (Wms, TX) 15490 at 1900. (Wilden, IN)

EGYPT—Radio Cairo, 12050 at 0105 in AA with Koran, broadcasting to Europe and Eastern North America. Also on 17771v in AA at 0003. (Wms, TX)

ENGLAND—BBC on 7325 at 0022, 9825 at 0100. News in SS at 0100. (Wilden, IN) Here at 2244 and 0002. Also 9915 at 0039. (Wms, TX) 11680 with "Calling the Falklands" at 2132. (Jeffery, NY)

BBC European program stream, monitored by Dave Jeffery: 0200-0300 on 6195, 9410; 0300-0400 on 9410; 0400-0500 on 9410, 12095; 1300-1500 on 15070, 17640; 1500-1700 on 15070; 1700-2100 on 12095, 15070; 2100-2130 on 15070; 2100-2200 on 12095; 2200-2230 on 12095, all via sites in the UK.

VOA via Wooferton, 15205 at 1622. (Wms, TX)

FINLAND—Radio Finland, 11845 at 2237 with "Compass North." (Jeffery, NY)

FRANCE—Radio France Int'l, 9790 at 0047 with jazz and commentary in FF. (Wilden, IN) At 0026 //9800, 11670 at 0055. Also in SS on 11670 at 2315.

FRENCH GUIANA—RFI relay, 9715 at 2302 in FF, 13640 at 1258 and 2335 in SS, 15525 at 1634 in FF. (Wms, TX)

RFO Guyane, 5055 at 0312 in FF. (Jeffery, NY)

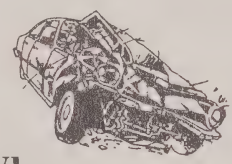
GABON—Africa Number One, 15475 at 1642 with FF "rap" talk, fast, modern stuff on synthesizer. (Wms, TX)

GERMANY—Deutsche Welle, 6160 at 0700 in GG (might be via Antigua, ed.) and 9640 at 0201 (probably via Brazil, ed.) (Wilden, IN) 11740 at 0058 with IS, ID in GG, then QRM'd by WYFR. Also 21560 at 1657 in GG. (Wms, TX)

GREECE—Voice of Greece on 11645 at 0052 in Greek. (Wms, TX)

Radio Makedonias, 9935 in presumed Greek at 0040. (Wms, TX)

VOA relay, 15265 in RR at 1630. (Wms, TX)



When seconds count, *REACT*® needs you...

...to summon help for an injured motorists, an elderly woman trapped in a fire, a trucker stranded in a blizzard, a drowning child!

As a REACT volunteer CB radio monitor you may be the only communications life-line for someone in serious trouble. You relay messages from those desperate for help to police or other emergency services.

Your REACT Team will also use CB and other radio services to provide safety communications for events like parades, marathons and even balloon races. The fellowship with other REACT members at Team meetings and annual conventions is an added bonus.

Volunteer. Join Today!

Add a New, Exciting Challenge to Your Life. Help Save Lives and Property!

***REACT*® International, Inc.**
Tel (316) 263-2100
FAX (316) 263-2118
P.O. Box 998, Wichita, KS 67201

REACT.

CIRCLE 78 ON READER SERVICE CARD

GUATEMALA—Radio Tezulutlan, 4835 at 0122 in SS. (Wms, TX)

HAWAII—KWHR, 9930 at 0943 with religious programs, ID. (Pappas, SD) At 1340 in unidentified language. Also at 1555 with religious music. (Wms, TX)

HONDURAS—La Voz Evangelica, 4820 at 0120 with music and ballads in SS. (Wms, TX)

HUNGARY—Radio Budapest, 9835 at 0030 with music and possible poetry readings in Hungarian. (Wms, TX) 0113 with news. (Wilden, IN)

INDIA—All India Radio, presumed, 13732 at 1929 in AA with Indian music, talks. Into presumed FF at 1945. (Lamb, NY)

INDONESIA—Radio Republik Indonesia, Jakarta, 9525 at 1035 in II. EE pops, "Song of the Coconut Islands" IS and ID at 1100 and into news. (Rausch, NJ)

IRAN—VOIRI, 15085 (nominal 15084, ed.) with prayers in Farsi at 2341. (Wms, TX)

ISRAEL—Reshet Bet domestic service, presumed, on 13750 at 0112 in Hebrew with two men in telephone conversation. 15615 at 1647 with synthesizer or electric guitar, fast ballads in presumed Hebrew. (Wms, TX)

Kol Israel, 9388//11588//13750 at 1912 in Hebrew with Sinatra music, Israeli pops, phone talk. 9435//11605//11685 at 1912 with "Insight" news program. The 1900 transmission is back to a full half-hour! (Lamb, NY)

ITALY—Radio Roma (RAI) on 11800 at 2323 with classical music. (Wms, TX) (In Italian? ed.)

JAPAN—Radio Japan, 9535 at 1542 with pops in JJ. 9750 at 1554 in JJ. (Wms, TX)

JORDAN—Radio Jordan, 11940 at 2326. Woman announcer and man with ballads in AA. (Wms, TX)

KAZAKHSTAN—Radio Netherlands relay, 9845 at 0039 with news in EE. (Wms, TX)

KUWAIT—Radio Kuwait, 9840 at 2306 to Europe and Eastern North America, in AA. Also 15495 at 2356. (Wms, TX) 11990 at 1800 with ID and rock. (Pappas, SD)

MADAGASCAR—Radio Netherlands relay, 9890 at 1339 with news. (Wms, TX)

MALI—presumed RTV Malienne, 4782 (weak) //5995 in FF with pops, talks, mention of Bamako, interview. (Lamb, NY)

China Radio Int'l relay, 15120 at 2343 in SS. Also 15130 at 1617 in EE. (Wms, TX)

MEXICO—Radio Educacion, 6185 at 0137 in SS. (Wms, TX)

La Voz de Vera Cruz, 9546 at 1321 in SS. Weak and soon lost. (Wms, TX)

Radio Mexico Int'l, 9705 at 2259 with pop ballads in SS. (Wms, TX)

Radio Mil, 6010 at 1536 with news in SS. (Wms, TX)

MOLDOVA—Voice of Russia relay on 11730 at 2320. (Wms, TX)

MOROCCO—RTV Marocaine, presumed, in FF at 1630 on 15335. (Wms, TX)

VOA relay, 11915 at 2003 in FF with pops, address, ID. Into Hausa at 2030. (Lamb, NY)

NETHERLANDS—Radio Netherlands, 6020 at 0100. Sign-off with frequencies at 0125. (Wilden, IN) 0131 in DD. Also 9895 in SS at 2312. Presumed also on unlisted 11680 at 2316 in SS. (Wms, TX)

NETHERLANDS ANTILLES—Radio Netherlands Bonaire relay, 6165 at 0136. (Wms, TX)

NIGERIA—Voice of Nigeria, 7255 at 0533 with news, report on Nigerian titles, IS, ID. (Pappas, SD)

NOTHERN MARIANAS—KHBI, presumed, 9430 at 1005 with Bible readings, "Christian Science Sentinel" program. (Lamb, NY) 13770 at 1806 with news feature. (Jeffery, NY)

PAKISTAN—Radio Pakistan, presumed, 11570 at 1722 in EE with talk on Islam, news with mentions of Pakistan, local music. (Lamb, NY)

PALAU—KHBN, 9965 at 1050 with religious talk, ID, address given at 1100. (Rausch, NJ)

PARAGUAY—Radio Nacional, 9735 at 0022 in SS with mentions of Paraguay. (Wms, TX)

PHILIPPINES—VOA relay, 11870 at 1949 with "Now Music USA" for the Pacific. ID and off at 0200. Early for VOA Philippines on the east coast but that's what the VOA engineering schedule showed. Not heard since. (Lamb, NY) On 17820 at 0004. (Wms, TX)

PORTUGAL—Radio Portugal Int'l, 9570 in PP at 2252, 9635 at 2254, 15200 at 1621 and 21655 at

1658. (Wms, TX)

Deutsche Welle relay, 7170//9615 at 2027. Frequencies and site ID. (Lamb, NY) 13780 at 0115 in GG. (Wms, TX)

RFE/RL relay at 2325 on 11935 in unidentified language. (Wms, TX)

RUSSIA—Voice of Russia, 11760.9 at 1955 with IS and another station underneath. 15105 at 1818 with talk on Russia's economic situation and another station underneath here, too. (Wilden, IN) 13650 via Serpukhov at 1611 in FF to Africa. 13705 at 1305 in unidentified language. 15210 (Irkutsk) at 1622 and 15550 (Tula) at 1645 in RR. (Wms, TX)

Jeffery has found these EE transmissions from the Voice of Russia: 0000-0100 on 9720; 0100-0300 on 9620; 0300-0400 on 9620(?), 13645(?), 15180(?) and 15425; 0400-0500 on 9620(?), 15180(?), 15425; 1200-1400 on 17780; 1500-2000 on 15400; 2000-2100 on 11630, 11675; 2100-2300 on 11730, 11750 and 2300-0000 on 9720, 11730, 11750. The question marks following some of the frequencies are Dave's. Very nice job—thanks! (ed.)

SINGAPORE—BBC relay, 9740 at 1335 and 1552; 11750 at 1345 and 11865 at 1351. (Wms, TX) 15360 Asia-Pacific stream at 0208. (Jeffery, NY)

SPAIN—Radio Exterior Espana, 9540 at 0109 with news and feature, IS, ID. (Pappas, SD) 0139 talking about events in Spain. (Wilden, IN) 11775 at 1310, 11795 at 1311, not listed. Also 15110 at 1616. (Wms, TX)

SUDAN—Radio Omdurman, 9200 at 1835 in EE with Islamic history talk and talk about development projects, "News in Brief," and schedule. Into AA at 1900. (Lamb, NY)

SWEDEN—Radio Sweden, 15240 at 1330 with report on "Steamboat Days," IS, IDs. (Pappas, SD)

SWITZERLAND—Swiss Radio Int'l, 9885 at 0117 with news. (Wilden, IN) 0037 in GG and 2310 in II. Also 9905 in GG at 0039. (Wms, TX)

SYRIA—Radio Damascus, 15095 at 2110 with march music, "Welcome to Radio Damascus," program line-up, news. (Lamb, NY)

TAIWAN—Voice of Free China, 9680 and 11740 (both via WYFR, ed.) at 0213. (Wilden, IN) 11745 at 1134 in JJ. (Jeffery, NY) 1308 in JJ. (Wms, TX)

TAJIKISTAN—Voice of Russia relay, presumed, 15220 at 1625 with classical music, then two men talking in AA. (Wms, TX)

TURKEY—Voice of Turkey, 15430 at 1640 with ballad in unidentified language, then woman talking in AA. (Wms, TX)

UKRAINE—Radio Ukraine, 9640 (Starobelsk) at 1546 with symphonic music, talk in presumed UU. 9685 at 2256 with light pops. 11720 (Lvov) at 0056, 11950 (Kharkov) at 2327. Also 15135 (Vinnitsa) at 1618 in UU. (Wms, TX)

UNIDENTIFIED—11615 strong, at 0049, two men in presumed Portuguese. Nothing listed. Maybe HCJB? (Wms, TX) HCJB is using this frequency at various times. (ed.)

UNITED ARAB EMIRATES—UAE Radio, Abu Dhabi, 13605 at 0108 in AA. (Wms, TX)

UNITED STATES—Voice of America, 6875 at 0439. (Wilden, IN) (This is a sideband feeder, Sue. ed.)

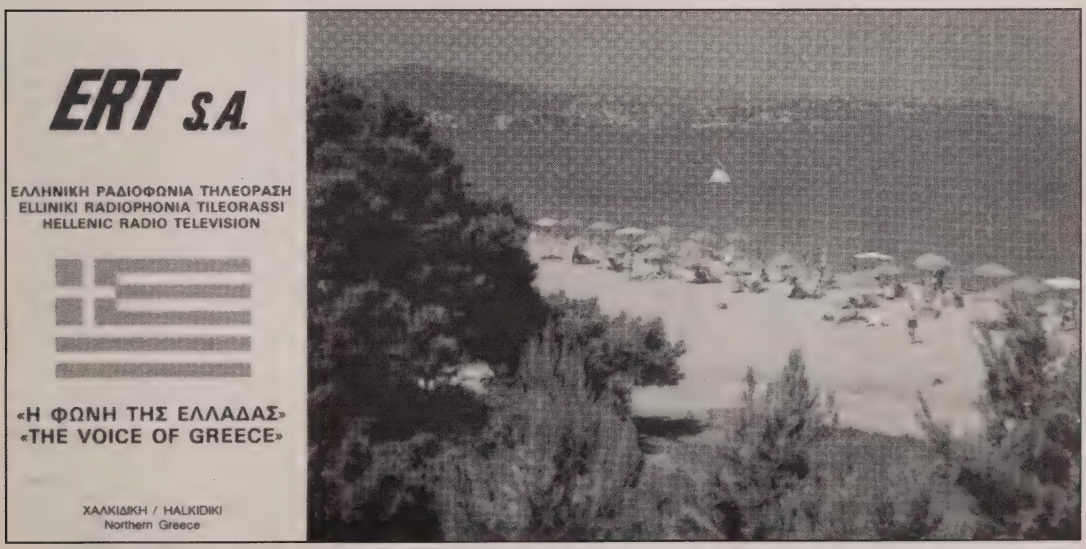
VATICAN—Vatican Radio, 5860 (ex-5865) at 0451 in FF with religious talks, IS, ID, into EE at 0500. Also 7305//9600//11830 at 2238 in CC, into EE at 2345. Also 11740 at 0957 with man announcing live broadcast of the bells of St. Peter's, ID, voice of the Pope in Italian. (Lamb, NY)

VENEZUELA—Ecos del Torbes, 4980 at 0123 with ballads in SS. (Wms, TX)

And that's all, folks! We had to close things down a bit early this time because of some travel commitments. A pat on the back for these good people who came through for all of us:

Dave Jeffery, Niagara Falls, NY; Ed Rausch, Garden Grove, NJ; Steve Williams, Corpus Christi, TX; Sue Wilden, Columbus, IN; Mariana Pappas, Huron, SD, and Marie Lamb, Brewerton, NY. Thanks to each of you! ■

Coming in December a better frequency book than Police Call. (It's about time!)



You can always count on QSLs from the Voice of Greece to feature an attractive scene. (Thanks to Charles Scott)

Mailbag

(from page 6)

100 kHz lower frequency limit. Your bold explorations have provided you an encounter with the strange and little known reverse frequencies in the mysterious NegaHertz (NHz) portion of the spectrum. Nobody knows for sure what exists there, but whatever it is, it can't be good. A regular frequency cycle alternates from zero to a positive peak to zero to a negative peak and back to zero. These weird NHz frequencies alternate zero-neg-zero-pos-zero. If you should hear anything there, be sure to let us know.—Editor.

Those Were Good Words

In the *Telephones Enroute* column last April, you were kind enough to mention our Cellular Surveillance Interface. Many thanks. It took us a while to figure out why we were getting a number of telephone calls from all over the world. Your magazine and this column in particular has a wide-based audience. Once again, many thanks for your efforts.

W.J. (Bill) Fischer,
Electronic Countermeasures Inc.
Calgary, Alberta, Canada

Hopes To Broadcast

I really enjoy *Popular Communications* and *CQ Magazines*, finding the information and advertising exciting.

My occupation is in the military. I have been a US Navy Radioman for 12 years. My reason for writing relates to the April issue, which contained a story by Tom Kneitel about low power broadcasting. This article was fascinating, especially the mention of the Seattle reader who asked where to write for information about building an AM or FM broadcast station. This is also my dream. With eight years left in the military, it's time for me to start doing some research if any of my dreams can ever turn into realities.

The information I need relates to license requirements in the broadcast services, as well as FCC regulations for stations. How much transmitter power would I need to cover a 35-mile range? What are the best antennas for AM and FM? What about fees to pay for playing music?

Hope you can head me in the right direction so I can begin collecting this type of information.

Kenny Dalle, RM2,
Bath, Maine

The FCC's complete regulations relating to AM and FM broadcasting stations are in Parts 73 and 74 of their rules. These are available from the US Government Printing Office, Supt. of Documents, Mail Stop: SSOP, Washington, DC 20402-9328. They are contained in a book entitled "Code of Federal Regulations Title 47, Parts 70 to 79." Check with the Govt. Printing Office regarding the current price of the latest edition.

For music licensing fees, request information from ASCAP at One Lincoln Plaza, New York, NY 10023, and also BMI at 320 West 57th Street, New York, NY 10019.

Power ratings and equipment selection factors are matters that depend on whether you hope to use AM or FM, where you want to locate, and other elements. Start looking through broadcasting trade publications to get some idea of what's around. You would be well advised to hire a consulting engineer to come up with the specific transmitter site selection and equipment choices.

Under the present FCC AM station freeze, you couldn't build a new AM'er from scratch, anyway. It's also easier to take over an existing FM, rather than start up a new one. Distressed and dark AM and FM stations are available at reasonable prices. All of them need plenty of effort, new ideas, and creative enthusiasm to come alive again. Broadcast station brokers always have "used" stations for sale. But there are no free lunches in radio; all broadcasters work hard for every dollar. Good luck!—Editor.

Thoughtwaves

(from page 5)

an October deadline was set for persons to comment on the FCC's plans. GMRS licensees seem to be upset by the plan and some have filed complaints with the FCC in response to its notice. The Personal Radio Steering Group—you can call them at (313) MOBILE3—is leading the opposition among GMRS licensees.

GMRS radios are a hot item these days. Uniden, Maxon, Tandy and Motorola all have proved that. Hunters use them, and so do volunteers. In fact, because of their wide popularity, you'll find a lot of unlicensed operations on GMRS, too. That's because the buyers of these mass-marketed radios don't bother to fill out the complicated FCC Form 574 and send in the required $60 for the license and user fee. Actually, it seems as though the FCC may be acting to close the barnyard door after all the animals have bolted. The commission surely has taken notice of all these GMRS handhelds being sold, but you can bet that someone who has just spent about $300 to $400 or more for two GMRS handhelds probably doesn't have much desire to spend another $60 (it was $80 up until a few months ago) to obtain a license. I mean, who's going to check up on you, right? And with recent announcements by the FCC that it no longer will enforce violations in the amateur and personal radio services, the buyer shouldn't have much to worry about. So, we really already have unlicensed users on GMRS channels who don't intend to get a license and there's not a whole lot you can do about it. It's all because the FCC started charging prohibitive fees for licenses and tacked on user fees to boot!

I hope that many GMRS licensees respond to the FCC's proposal to create the FRS. It's a good idea, but not on GMRS frequencies. Find room on 900 MHz or even higher in the spectrum. Make it unique without riding on the coattails of another viable radio service. You can bet that a lot of GMRS repeaters sponsored by individuals will be shut down if they have to contend with potential interference from FRS users on adjacent interstitial frequencies. Heck, I guess that's why my wife and I both have cellular phones. At least we only have to listen to each other.

73, Chuck

Calling All Military Monitors

I am trying to establish an International Military Monitoring Enthusiasts Group. I presently edit a newsletter called *SIGNET*, dedicated to all forms of military communications on HF/VHF/UHF/SHF. This newsletter was originally created to enable UK and European listeners in military monitoring to exchange information. The aim of the International group will be to bring together enthusiasts from throughout the world, especially North America and Europe, to exchange ideas via the newsletter. If any *POP'COMM* readers are interested, they can receive a sample copy of the current *SIGNET* and more details by sending three IRC's.

David Mulligan, Editor,
"SIGNET,"
B.C.A.G.,
19 Crescent Road,
Hunstanton, Norfolk, PE36
5BU
ENGLAND

The copy David sent us had 16 pages, was staple-bound, and contained lots of juicy frequencies and other information.—Editor.

COMMUNICATIONS SHOP

Advertising Rates: Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge $6.00 per issue. Ads from firms offering commercial products or services are $1.00 per word; minimum charge $20.00 per issue. Boldface words are $1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

Approval: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.

Closing Date: The 10th day in the third month preceding date of publication. Because the advertisers and equipment contained in Communications Shop have not been investigated, the Publisher of Popular Communications cannot vouch for the merchandise listen therein. Direct all correspondence and ad copy to: PC Communications Shop, 76 N. Broadway, Hicksville, NY 11801.

Please take note: As of May 1, 1995, we are no longer accepting free subscriber ads.

CB RADIO OWNERS AND DEALERS. A new line of accessory circuits is now available. Breaker Beeper, Receiver Pre-Amplifier, Roger Beeper, many more—some never before available! Send an S.A.S.E. for a free catalogue to 6810 7th Street, N.E., Tacoma, WA 98422.

TRADE OR SELL Realistic HTX-202 with optional speaker mike, $200. Realistic PRO-37 200 channel scanner, $200. Have manuals. Will trade both for ICOM R-1. Call Steve, (914) 774-8891.

TOMCAT'S BIG CB HANDBOOK, by Tom Kneitel. 221 large pages, fully illustrated. Complete guide to worldwide AM, SSB, Freeband, 27 MHz operations. Everything they never told you (legal & otherwise) from world's leading CB authority. Only $15.95 plus $5.00 s/h (Canada $6.00) from CRB Research Books, Inc., PO Box 56, Commack, NY 11725. (NYS residents add $1.78 sales tax).

WANTED: RADIO NEWS MAGAZINE, February 1944 (Special Signal Corps Issue). Pay $25.00– $50.00 depending on condition, & Military Radio Manuals (all years). **GENE, KD4YIZ,** 1-800-619-0900, MMI, Box 720024, Atlanta, GA 30358-2024.

WORLD'S MOST UNUSUAL Communications Books! A large selection of outstanding titles covering scanners, "confidential" frequency registries, bugging, wire tapping, electronic surveillance, covert communications, computers, espionage, monitoring, and more! New titles being added constantly! Ask for our big FREE catalog. CRB Research, BOX 56-PC, Commack, NY 11725.

LOOKING FOR crystals for Drake 2B receiver. Also need information on restoring cellular capacity to Realistic Pro-46 scanner. Sue Wilder, 2204 6th Street, Columbus, IN 47201.

WANTED: USED OPTOELECTRONICS APS104 PRESELECTOR. **FOR SALE: OPTOELECTRONICS** CF800 8355 MHz Filter/Amp. Brent Gabrielsen, 1177 East Tonto, Apache Junction, AZ 85219. (612) 969-8663.

COMMODORE 64 HAM PROGRAMS—8 disk sides—over 200 Ham programs—$16.95. 32¢ stamp gets unusual software catalog of Utilities, Games and British disks. Home-Spun Software, Box 1064-PC, Estero, FL 33928.

NTR-1 DSP NOISE/TONE REMOVER, new. I paid $169.95; yours for only $95. Send money order to Yassin Abdela, Two Riverside Street, Rochester, NY 14613. Call (716) 254-0940 before mailing check.

MINI SONY Surveillance TV System. Swedish/ German light meters, temperature chart recorder, professional sound meter. Shack applications. Pictures/ info; $1/LSASE to: R. Summers, 6804 Rockforest Drive, Louisville, KY 40219.

TUNE In On Telephone Calls. Revised and Updated Edition! Tom Kneitel's controversial 160-page book. Everything you need to know to effectively use a scanner and communications receiver to eavesdrop on private telephone calls from homes, offices, cars, ships, aircraft, trains. Explanatory text, photos, extensive listings section covers USA/Canada on HF, VHF, UHF, and above; thousands of locations, frequency assignments. Explains equipment, best techniques, laws regarding monitoring cellular, cordless, ship/shore, high seas, Air Force 1, airliners, 1-way paging, more. Only $14.95 plus $5.00 s/h (Canada $6.00) from CRB Research, PO Box 56, Commack, NY 11725. NY residents add $1.70 sales tax. Dealer inquiries invited. Visa/MC OK. Tel: 1-800-656-0056.

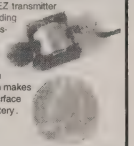
RADIO SHACK SCANNERS - Lowest prices all catalog items. 1000-channel PRO-2035, reg. $449, our price, $389. PRO-62 and PRO-51, Call! DX-390, reg. $220, call! No tax out of Florida. Call 1-800-848-3004. Orders only. **COTRONICS INC.**, 2250 SE Federal Hwy., Stuart, FL 34994.

WOW! UNDERSTANDING & REPAIRING CB RADIOS by Lou Franklin. Giant 380-page technical book picks up where THE "SCREWDRIVER EXPERTS" GUIDE leaves off. Includes circuit descriptions and troubleshooting guide for virtually all CB radios: 23 and 40-channel, crystal and PLL, solid-state and tube, AM, FM, SSB, CW, American, British and export models. Covers test equipment, transistor basics, synthesizers, receivers, transmitters, power supplies, T/R switching, antennas, interference, parts and accessory sources. Over 350 illustrations, plus huge subject index. Moneyback Guarantee! Only $29.95, plus $3.50 U.S & Canadian Air Mail, VISA/MC accepted. Free catalog of unique CB books, plans, and modification kits with order. Catalog only $3. CBC INTERNATIONAL INC., BOX 31500PC, Phoenix, AZ 85046. Thousands of satisfied customers since 1976.

NEW AWARDS PROGRAM! For SWL's, DX'ers, Scanner Buffs! Self-addressed stamped envelope brings details! ISWAC, Box 66, Hanover, MI 49241.

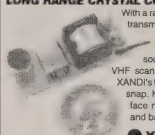
WORLDS SMALLEST FM TRANSMITTERS

MICRO-MINIATURE FM TRANSMITTER!
In spite of its micro-miniature size, the XWB1000-EZ transmitter kit punches out a signal up to 1/2 mile away! Including the battery, this is absolutely the smallest FM transmitter available. Miniature battery and holder included on circuit board for minimum size. Amazing audio sensitivity. Picks up sounds at the level of a whisper. Use with any FM broadcast receiver from 88 to 108 MHz. XANDI's famous E-Z kit approach makes assembly a snap. Kit includes pre-assembled surface mount module, microphone, antenna wire, and battery.



XWB1000 E-Z $49.95

LONG RANGE CRYSTAL CONTROLLED FM TRANSMITTER!
With a range of up to 1/2 mile, the new XTL1000-EZ transmitter KIT is an outstanding performer. Miniature battery and holder included on circuit board. Amazing audio sensitivity. Picks up sounds at the level of a whisper. Works with any VHF scanner or surveillance receiver at 143 MHz. XANDI's famous E-Z kit approach makes assembly a snap. Kit includes pre-assembled and tested surface mount module, microphone, antenna wire, and battery.



XTL1000 E-Z $69.95

LONGER RANGE CRYSTAL CONTROLLED FM TRANSMITTER!
With a range of up to 1 mile, the new XTL3000-EZ transmitter E-Z KIT out performs any other unit available. Miniature battery and holder included on circuit board. Amazing audio sensitivity. Picks up sounds at the level of a whisper. Works with any VHF scanner or surveillance receiver at 143 MHz. XANDI's famous E-Z kit approach makes assembly a snap. Kit includes pre-assembled and tested surface mount module, microphone, antenna wire, and battery.

XTL3000 E-Z $89.95

1-800-336-7389
SATISFACTION GUARANTEED.
CHECK, VISA, MC, MO or COD, S&H EXTRA
ASK FOR OUR NEW CATALOG!
XANDI ELECTRONICS, INC. Serving The Public Since 1981
1270 E. BROADWAY RD #113, TEMPE, AZ 85282

CIRCLE 90 ON READER SERVICE CARD

Privacy • Communications • Hobbyist

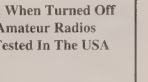
Experienced & Specialists In:
Countermeasures • Scanners • Frequency Counters • Night Scopes • Confidential Frequencies • Codes • Binoculars • Spy Scopes • Reports & Journals On Locating And Removing Electronic Evesdropping Devices • C.B.'s & Accessories • And Much More!
We Guarantee Top Quality! Catalog $7.00
We Also Do "Sweeps" For Local Residents.

Precision Electronics
7841 Reseda Blvd., Suite 223
Reseda, CA 91335
Phone: (818) 705-3115 FAX (818) 344-5863
(800) 555-7446 24 hr orderline

CIRCLE 75 ON READER SERVICE CARD

Increase Your Average Audio To Approximately 90%

The Ranger's Speech Processor SP-1a
$49.95+ shipping



- Variable Compression & Input Gain
- Works Well With Stock Or Amplified Mic
- Improves Tone Quality
- Processor Completely Bypassed When Turned Off
- Easily Installed In Most CB & Amateur Radios
- Professional Quality, Made & Tested In The USA
- Dimensions 2 1/2" x 1 3/4" x 7/8"

BCB
72 Eastern Avenue
Malden, MA 02148
(800) 473-9708

CIRCLE 54 ON READER SERVICE CARD

NEW CODE READERS From $149
Copy Morse Code From Your Receiver!
No Computer Hookup or TNC Needed!
Tune in to coded shortwave signals. Listen in to interesting amateur, commercial, military, exotic and secret code from all over the world.
Break the code barrier! Learn CW, Copy RTTY & ASCII too!

Power Supply Included FREE!
CODE SCANNER - Compact, light weight reader 32 character LCD. Wired...$179 S&H $6
CODE BREAKER - Sleek design. 8 Large LEDs. Great code tutor too. (Option: PC serial port.) Wired...$149 Wired Port...$29 S&H $6
Free Brochure. Call-Write-Order. MC/VISA.
Microcraft Corporation
Box 513PC, Thiensville, WI 53092
Phone (414) 241-8144

CIRCLE 72 ON READER SERVICE CARD

C. CRANE COMPANY
COMMUNICATION
Shortwave ● Scanners ● Antennas
SANGEAN, GRUNDIG, DRAKE, UNIDEN
The most powerfull loop antennas for Shortwave/MW and much more!
International shipping
558-10TH ST. FORTUNA CA 95540
Free Catalog FAX 707-725-9060
800 - 522 - (TUNE) 8863

CIRCLE 56 ON READER SERVICE CARD

Quality Microwave TV Systems
WIRELESS CABLE - ITFS - MMDS
ATV - INTERNATIONAL - S-BAND
Amplifiers • Antennas • Books • Components
Filters • Systems • Video Products
• RF Frequency 1990 - 2700 MHz
• Cable Ready - VHF - UHF Outputs
• SASE For "FREE" Catalog or Send $1
PHILLIPS-TECH ELECTRONICS
PO Box 8533 • Scottsdale, AZ 85252
CHALLENGER SYSTEM 33-Channel 52dB+ Gain Complete Grid $265 Five Year Warranty FREE SHIPPING
ORDER LINE 800-880-MMDS
CATALOG/INFO 602-947-7700
FAX LINE 602-947-7799
Visa • M/C • Amx • Disc • COD's • Qty Pricing

CIRCLE 74 ON READER SERVICE CARD

Valuable FCC Licenses
How About Your Own TELEVISION STATION
Range 15-20 Miles FREE 8-Page Report
TRD
1-800-881-0047

CIRCLE 85 ON READER SERVICE CARD

Great Offer!
FREE ★ 1995 CATALOG OF THE WORLD'S MOST FAMOUS CB ANTENNAS & ACCESSORIES ★ FREE
FIRESTIK COMMUNICATIONS
2614 E. Adams · Phoenix, AZ 85034
Write or Call, 602-273-7151

CIRCLE 64 ON READER SERVICE CARD

MORSE CODE Got You Down? Why let a mental block stand between you and upgrading? Use Alternative Art's **CW Mental-Block Buster to blast through those barriers.** Just follow the instructions for 30 days—Results Guaranteed! Based on 40 years of research, the **CW Mental-Block Buster** uses guided meditation, dynamic visualizations, and powerful affirmations to blast through mental blocks. **You can do code!** That means new bands, more contacts, more fun! (This is not a CW practice tape.) The **CW Mental-Block Buster** audio cassette and practice booklet are only $25.95 ppd. in the US. **Alternative Arts**, 4601 Rosemare Rd., Parkersburg, WV 26101. (304) 422-2767. MC/ VISA, COD. Mail orders include signature. Office hours after 4:30 Eastern.

CW? NO PROBLEM. You can increase your speed, no matter how many times you've failed before. **Results guarateed** when you follow the instructions. Alternative Art's CW Mental-Block Buster program helps you **explode mental blocks** that hold you back. Based on 40 years of research, the **CW Mental-Block Buster** uses guided meditation, dynamic visualizations, and powerful affirmations to blast through mental blocks. You can do code! That means new bands, more contacts, more fun! (This is not a CW practice tape.) The CW Mental-Block Buster audio cassette and practice booklet are only $29.95 ppd. in the US. (Quantity discounts available for classes.) **Alternative Arts**, 4601 Rosemare Rd., Parkersburg, WV 26101. (304) 422-2767. MC/ VISA, COD. Mail orders include signature. Office hours after 4:30 Eastern.

RADIO MONITORS NEWSLETTER OF MARYLAND FOR THE SERIOUS SHORTWAVE AND SCANNER LISTENERS. PO BOX 394, Hampstead, MD 21704. For a one year subscription: $15.00. Sample copy: one dollar.

WANTED HIGH PERFORMANCE? The "Great" CBs, necessary accessories, antennas of the "Golden Era." Special Schematics, Classic Tubes, Dynamite Xstrs. L.S.A.S.E. to: AC, PO Box 383, Buckner, NY 40010-0383.

WANTED: Non-working, Regency HX-1000 scanner for parts. Preferably in good physical condition. Also, working drop-in charger for same. Les Wilson, 104 Rhoda Ave., North Babylon, NY 11703-3212.

FOR SALE: Amplifier with four 4-1000A's, Dahl transformers, Jennings vacuum variables monoband 10-12 meters—$5,000. Grady, POB 62, Cookeville, TN 38503. 615-432-5588.

ANTENNAS for CB, SCANNER, CELLULAR, 2-WAY base, portable, mobile. High quality at discount prices. Price list, $1. **Radio Communications Services**, 1007 Eastfield, Lansing, MI 48917.

CB RADIO HACKER'S GUIDE! Big 151 page book; pictorials, diagrams, text. Complete guide to peaking, tweaking, & modifying 200+ CB radios for enhanced performance & more features. Which screws to turn, which wires to cut, AM & SSB radios: Cobra, Courier, GE, Midland, Radio Shack Realistic, SBE, Sears, Uniden/President. Get the most from your CB radio & operations. Only $19.95, plus $5.00 shipping ($6.00 to Canada). NY State residents add $2.12 tax. Order from CRB Research Books, Inc., PO Box 56, Commack, NY 11725. Visa/MC OK. Tel: (516) 543-9169.

PAN-COM INT'L CATALOG. Over 350 Kits, Plans. Licensed/unlicensed AM/FM broadcasting. Ham/CB/SW/DX, 1750M transmitters, Surveillance devices, Computers/Software, Science Projects, MORE! $1 refundable. Box 130-P08, Paradise, CA 95967.

HAM RADIO PROGRAMS (plus 100s of other applications). Low as $1.00 per disk. Send $2.00 for catalog and sample disk to: TRI-MI SOFTWARE, 517 Pine Brook Road, Eatontown, NJ 07724. (908) 389-1049.

NATIONAL SCANNING REPORT, America's #1 all-scanning magazine. Articles, frequencies, new products, more. One year subscription ($19.90) includes custom frequency print-out for your county. Order toll-free 1-800-423-1331. Sample copies $3.00 cash from Box 360, Wagontown, PA 19376.

CW Lite is the **easiest** Morse Code training method in the world, bar none! And it is the fastest, too. Just closed your eyes and relax. This powerful **hypnosis cassette tape** does the rest. Subliminals speed you along! Only $15.95 ppd in US Order today! **Alternative Arts**, 4601 Rosemare Rd., Parkersburg, WV 26101. (304) 422-2767. MC/ VISA, COD. Mail orders include signature. Office hours after 4:30 Eastern.

PRO 23, 34, 37, 39, 43, 46, 51, 2006, 2022, 2026, 2027, 2032, BC-855XLT, BC-200, BC-2500XLT 800 MHz modifications. Well explained and illustrated steps, $12 each, or $20 if we do modification. Also modifications for cellular receivers BC80AT, 150, 220, 700, 860, 890, 2500, 3000, 8500, 9000, TR980, 1200, 2400, PRO2035, AR8000, $7 each. Available to sell your products in Quebec and Canada; new brands and products welcome. A.P., 500 Dineen, Apt. 200, Labrador City, Newfoundland, A2V 1E6 Canada.

LOCATING, TRANSLATING SERVICE: Books, shop service manuals, journals. Will barter third world translation services, book forwarding. Waterproof pages optional. Specialties: Bio-medical, folk medicine, Celestial Navigation. $200 package. Bater with bible translators, Peace Corps, others. R.V. Engineering, PO BOX 734, Ottertail, MN 56571. (218) 367-2636.

SCANNER MODIFICATION HANDBOOK VOL.1 by Bill Cheek. The famous original 160-page books. Performance improvement modifications. Simple step-by-step instructions, many photos. Primarily PRO-2004 & PRO-2005, some for PRO-34, BC-200/205XLT, BC-705XLT, BC-705XLT. Restore blocked-out bands, speed up scanning rate, disable "beep," increase number of channels, improve squelch action, add an S-meter, interface with shortwave receivers, etc. Make the PRO-2004 & 2005 into a 6,400 channel scanner; put 3,200 channels into the PRO-34! Plus, cellular frequency charts, antenna info & mods, inside info on frequency management, operating hints, emergency power supplies, scanners & the law, lots more! Only $18.95, plus $5.00 s/h (Canada $6). Residents of NY State add $2.36 tax. Big 220 page **VOL. 2** with more mods for PRO-2004/5/6, PRO-34, PRO-2022, BC-760/950XL, BC200/205XL, also available, $18.95 plus $5.00 s/h (Canada $6). NY State residents include $2.36 tax. **NEW!** The Ultimate Scanner, **VOL. 3**. Giant 240-page edition. Many more mods! Picks up where the first two books ended. $29.95 plus $5 s/h (Canada $6), residents of NYS add $2.97 tax. Order from CRB Research Books, Inc., PO Box 56, Commack, NY 11725. Visa/MC welcome. Tel: 1-800-656-0056.

GUIDE TO THE AR1000. We publish a complete, 90-page guide for the operation and use of all AOR-AR1000 and Fairmate HP-100/200 scanners. Comes with 10 scan bank templates and a handy, six-panel, folded Quick Reference Card. $18.45 including S&H in the USA. Design EQ, PO Box 1245-PC, Menlo Park, CA 94025. 415-328-9181.

MEN OF ACTION AND ADVENTURE — Paladin Press has been described as "the most dangerous press in America." Millions of satisfied readers disagree. Outrageous and controversial books and videos on firearms, exotic weaponry, unconventional warfare, new identity, espionage and investigation, privacy, action careers and more! To order our 50-page catalog send $1.00 to: Paladin Press, Box 1307-3BP, Boulder, CO 80306. (303) 443-7250.

HOW TO BUY A USED SHORTWAVE RECEIVER—$6 ppd. Complete catalog of Patriot/Right Wing books - $1. Bohica Concepts, POB 546-PC, Randle, Washington 98377.

SELECTED SHAREWARE (MSDOS): Choice programs. All good. Many unusual. No disappointments. $1 each. Free catalog on disk. Restricted book listing included. **MENTOR PUBLICATIONS, Box 1549-P, Asbury Park, NJ 07712.**

SHORTWAVE LISTENER looking for RTTY, FAX, etc., enthusiasts in Miami, FL area. I have equipment, but can use more know-how. Maybe start a club? Call Dan, (305) 226-3987.

PROBE. Powerful! Easy! Fast! Ultimate software for Optoelectronic's **OptoScan 456**. Free details. **DataFile Inc.**, Box 20111, St. Louis, MO 63123.

I'M INTERESTED in exchanging frequencies with scanner listeners in the Buffalo, Western New York area, and Toronto Southern Ontario area. Joe Galante, 34 Hampton Court, Williamsville, NY 14221-4301.

BUILD THE ULTIMATE 11 meter vertical. For detailed plans send $15 to Terrapin Sales, P.O. Box 12426, La Crescenta, CA 91224-5426.

UHF MILITARY BAND (225 to 400 MHz) monitoring aids. High performance MAX-225 ground plane antenna designed especially for this band, fully assembled, $29.95 plus shipping. GRE Super Amplifier 20 dB scanner preamp (100 to 1000 MHz), $55.95 plus shipping. "Directory of North American Military Aviation Communications," your state or province, $24.95 plus shipping. "Top Secret Registry," $21.95 plus shipping. USA shipping is $5 for first item, and $1 for each additional item. Canadian shipping $6 for first item, and $2 for each additional. NY State residents add 8.5% sales tax to item price and shipping cost. MC/VISA welcome. CRB Research, P.O. Box 6, Commack, NY 11725. Phone orders: 1-800-656-0056, Canada/AK/HI phone orders: (516) 543-9169.

MILITARY RADIOS: Easily made battery adapters for military radios & other electronics. Get **POWER UP!** Big new 96-page manual of instructions, diagrams. Use readily available commercial batteries in PRC-6, -8, -9, -10, -25, -28, -47, -74, -77, TRC-77, AN/PRC-9, AN/PRT-4, RT-77, URC-68, more; also mine detectors, night scopes, radiacs, field telephones, etc. Only $14.95, plus $5 s/h ($6 Canada). NYS residents add $1.53 tax. CRB Research Books, Box 56-PC, Commack, NY 11725. VISA/MC accepted. Phone (516) 543-9169.

MacRadio. Macintosh tutorial program for New Pool Novice & Technician HAM License. $29.00 + $3.00 shipping (CA add $2.40 tax). Lightning Industries, 1806 Milmont Dr., #125, Santa Clara, CA 95035 (408) 942-7998.

MINIATURE TRANSMITTERS! All types! Send $2 for information, refundable on first purchase. Parsec Electronics, P.O. Box 34594, Phoenix, AZ 85067-4594.

ORGANIZE AND PROTECT YOUR COPIES OF

Popular Communications

Now there's an easy way to organized and keep copies of your favorite magazine readily available for future reference.

These custom-made titled cases and binders are ideal to protect your valuable copies from damage.

They're designed to hold a year's issues (may vary with issue sizes), constructed with reinforced board and covered with durable leather like material in flat blue, title is hot-stamped in gold, cases are V-notched for easy access, binders have special spring mechanism to hold individual rods which easily snap in.

Cases: 1-$8.95 3- $24.95 6-$45.95
Binders: 1-$11.25 3-$31.85 6-$60.75

Popular Communications
Jesse Jones Industries, Dept. 95 POP-COMM
499 East Erie Avenue, Philadelphia, PA 19134

Enclosed is $_____ for _____Cases; _____Binders. Add $1.50 per case/binder for post-age & handling. Outside USA $3.50 per case/binder (US funds only).

PA Residents add 7% sales tax.

Print Name _____

Address _____

No P.O. Box Numbers Please

City/State/

Zip _____

CHARGE ORDERS (Minimum $15): AMEX, VISA, MC, DC accepted. Send card name, #, Exp. date. Allow 4 to 6 weeks for delivery

Call TOLL FREE 7 days, 24 hours 1-800-825-6690

BEST PRICES

Cobra 148 GTL

$142.99 C.O.D.

If You Think This Is A Great Price... Call For A *FREE* Catalogue

1-800-626-6343

COPPER ELECTRONICS, INC.

3315 GILMORE INDUSTRIAL BOULEVARD • LOUISVILLE, KY 40213 • 502-968-8500

VISA MasterCard C.O.D

BEST SELECTION

CIRCLE 91 ON READER SERVICE CARD

YOU AIN'T HEARD NOTHIN' YET

Since 1967, CRB Research has been the world's leading publisher and supplier of unique hobby and professional books and information including:

- Scanner Frequency Guides
- Shortwave Frequency Guides
- Military/Federal Communications
- Undercover Communications
- Survival Communications
- & Other Related Topics!

New titles are constantly being added to our exciting catalog. If it's interesting and unusual, we've got it. You'll see. Ask for our latest FREE catalog.

Ask For Big Free Catalog

CRB RESEARCH
P.O. Box 56, Commack, NY 11725
Phone: (516) 543-9169
FAX (516) 543-7486

CIRCLE 11 ON READER SERVICE CARD

THE GE SUPERADIO III with up to four modifications is choice for many DX'ers. Low as $85. MC, VISA, 800-944-0630.

"FORBIDDEN SECRETS OF THE LEGION OF DOOM HACKERS!" Big 224-page handbook. The infamous LOD's condemned programs and amazing techniques, from the LOD's now shut down in BBS. Hacking, phreaking, and more! Hard to locate information, now in this Limited edition. For reference and informational purposes only, $20.95, plus $5 s/h (Canada $6). NYS add $2.21 tax. VISA/MC okay. CRB Research Books Inc., Commack, NY 11725. Phone orders: 1-800-656-0056.

JUST PUBLISHED, Bill Cheek's The Ultimate Scanner (Cheek 3) doesn't just build on his two earlier bestsellers. His new, indispensable bench manual goes further and faster, detailing scanner modification technology including memory enhancements, up to 25,600 channels, cellular restoration, simple ways automate arduous scanning tasks, signal discrimination, computer interfaces, optimum antennas, autologging "hits," power options, SCA decoders, autorejecting, hacking, and tons more. With a wealth of step-by-step procedures, photos, charts, diagrams, and schematics, Cheek shows us how to dramatically improve scanner performance. 250 pages, large format, $29.95 (plus $4 s/h; CA add 7.75% tax). Index Publishing Group, Inc., 3368 Governor Drive, Suite 273P, San Diego, CA 92122; order line, (800) 546-6707.

SOFTWARE. Communications electronics study program. General radiotelephone, CET preparation. 84 modules, on four 3.5-inch diskettes. Requires EGA/CGA. Interactive and user friendly. $35 for entire program. Tutor-tech, 170 Locksunart Way #2, Sunnyvale, CA 94087, (408) 481-9543.

LAST CHANCE: We have a very limited supply of the modifiable cellular Bearcat scanners left, BC-200XLT, BC-2500XLT, BC-890XLT, etc. Once these are gone, they are gone forever. Call for close-out prices—we ship COD, and free U.P.S. shipping to 48 states. Galaxy, Box 1202, Akron, OH 44309, (216) 376-2402, 8:30-4:30 EST. Our 11th year!

HALLICRAFTERS CONTINENTAL MODEL 5R33A manual wanted. Will pay postage and copying. Steve Batson, 4012 Staunton Ave., Charleston, WV 25304.

SATELLITE RADIO BOOK AND GUIDE. New book covers all Audio Services, SCPC, Subcarriers, FM Squared, Facsimile, Press Services, Weather Services. Simple how-to-receive instructions, $16.95, plus $3 Priority Mail. UNIVERSAL ELECTRONICS, 4555 Groves Road, #12, Columbus, OH 43232, or call (614) 866-4605.

SCANNER FREQUENCY SEARCHES: Hear it all!! New services. SAE to: Heald, 6886P Jefferson, North Branch MI 48461.

INTERNATIONAL CLASSIFIED ADS. Buy sell or trade electronic "stuff." Biweekly publication. Free ads, send today! Trading CIRC-IT, 86 Victoria Street, South Kitchener Ontario Canada N2G 2A9. SASE for information. E-mail b.blyleven@genie.geis.com.

HOME AUTOMATION. Become a dealer in this fast-growing field. Free information. Send name, address, phone to ECS, Box 407, Fairbury, NE 68352, or call (800) 838-4051.

CABLE DOCTOR—Stop the bullet and ID signaling cable lines. Send $21 to RR Enterprises, Department PC, Box 3532, Easton, PA 18043.

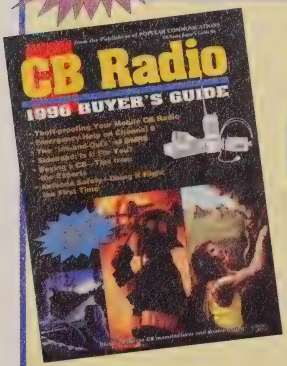
$3.95 + s/h

ANNOUNCING

NEW!!

The ONLY nationally distributed CB publication

POPULAR COMMUNICATIONS
CB Radio Buyer's Guide



EXCLUSIVELY for CB enthusiasts, whether you're just getting started in CB or you're an old-timer, this is the Guide for YOU!!!!!

ARTICLES • PRODUCTS • PHOTOS • DEALERS

Be part of the CB scene—If you've got a CB, this is YOUR Buyer's Guide—chock full of how-to articles from antenna installation and safety, to getting the most from your CB.

We've got the U.S.A.'s CB authorities—Tom Kneitel, Jock Elliott, Ron McCracken, Bill Price and many others all IN ONE BIG CB Buyer's Guide! They'll tell you how to be part of the fun, safety and security CB brings everyone!

++FULL CB PRODUCT LISTING++

All the CB transceivers; base, mobile and walkie-talkies, many with photos - ALL with suggested retail prices - AND dozens of miscellaneous accessories, from antennas to microphones to complete your CB installation!

Articles and photos on:

- Tips on getting AND giving help on Channel 9
- Buying a CB — What You Need To Know
- Packing A Punch, Legally — All About Gain and Antennas
- Sideband — Your Ticket to Increased Range and More Fun
- ***AND MANY MORE***

BONUS information AND product listing. GMRS, The General Mobile Radio Service: Serving your community in time of need.

$3.95 at your CB dealer or newsstand
(add $2.50 shipping and handling for mail or phone orders)
Mastercard, VISA, American Express, Discover accepted.
Send card number and expiration date with order.

Popular Communications
76 N. Broadway, Hicksville, NY 11801. FAX 516-681-2926. For Fastest Service, Order Toll Free (800) 853-9797

RESTRICTED top secret Hacker information. Cellular/cable/surveillance/satellite/ VideoCipher/ books/videos and more. Catalog—$3. **TELECODE,** P.O. Box 6426-PC, Yuma, AZ 85366-6426.

MILITARY MONITORING GUIDE. New book covers all phases of Military Monitoring. Military Frequencies all services: U.S. Military Bases, Military Black Projects, Major Air Force Installations, Monitoring Equipment and Systems, Navy/Coast Guard, and more, $19.95, plus $4 Priority Mail. UNIVERSAL ELECTRONICS, 4555 Groves Road, #12, Columbus, OH 43232. (614) 866-4605.

VHF AERO SCANNER GUIDE: Kneitel's Air-Scan, sixth edition. Great new edition of the new comprehensive and popular USA/Canada VHF aero band directory ever published: Civilian, Military, Private Airports, Heliports & Seaplane Bases. Control Towers, ARTCC, Weather, Approach/ Departure, FSS, Ground Control, ATIS, Unicoms, National & Air National Guard freqs., etc. Many listings for airport security, fire/rescue, airline ground services & more beyond the aero band. You ONE "must have" guide to tens of thousands of aero related monitor frequencies! Only $18.95, plus $5 s/h ($6 to Canada) from CRB Research, P.O. Box 56, Commack, NY 11725. VISA/MC accepted. Phone orders 1-800-656-0056. Orders from Canada/HI/ AK: (516) 543-9169. (NYS res. add $2.04 tax.)

THE AMERICAN INTERNATIONAL CLUB is the fastest growing 27 MHz LSB DX club in existence. For application send SASE: AIC, Box 701431, Queens, NY 11370.

RCI-2950/2970 MODIFICATION MANUAL. Power and modulation increase. Clarifier, receiver, noise blanker modifications, operating hints, and more. Parts included, $20 ppd U.S. money order, $25 COD (MO residents add $1.15 tax). Scott, P.O. Box 510408, St. Louis, MO 63151-0408, (314) 846-0252.

FREE IMPORT/EXPORT CB CATALOG by **FAX-ON-DEMAND** 24 hours a day. **LOWEST PRICES.** Call **LORD/WYATT COMMUNICATIONS,** (718) 789-7329.

LOOKING for owner's manual for Panasonic model RF-4900. Scott Douglas, 513 North Franklin Street, Juneau, AL 99801.

CABLE TV DESCRAMBLERS/CONVERTERS. Why rent? Lower your bill. SAVE $. Wholesale prices. Money back guarantee. Free 30-day trial. **RP ELECTRONICS**, 1-800-304-3604.

CRIMEFIGHTERS send $2 for fully illustrated police equipment catalog, BPEC Department PCM795, P.O. Box 7240, Moreno, CA 92552.

WANTED: 5-NB noise blanker and DCPC 12-volt power cord. Both for Drake SPR-4 receiver. Call Bill, (313) 676-5161 after 6 p.m. EDT.

CB 10 METER radios, antennas, meters, HF amplifiers, mobile and base. Send $1 for postage. 10013 NE Hazel Dell Avenue, Suite 513, Vancouver, WA 98685.

CABLE DESCRAMBLER! Build with seven Radio Shack parts for under $12! Complete instructions only $8. F.A.S.T., Box 369-U12, Pt. Salerno, FL 34992-0369.

FOR SALE: ICOM R-1 full coverage, complete with BP-90. Excellent condition, $350. Jim, (810) 634-8099.

FOR SALE: Radio Shack TRC-465 40 channel AM/SSB mobile transceiver. Like new with antenna. (6087) 326-6421. Ask for Jeff.

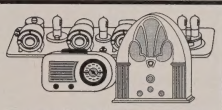
We Have Scanners with 800MHz Coverage!

ICOM R9000, R7100, R1, R100
Yupiteru MVT-7100, MVT-8000
AOR AR-2700, AR-8000A, AR-3000A
We do Modifications for your Scout!

AR-8000 Wide Range Receiver
500KHz~1900MHz coverage AM/NFM/WFM/USB/LSB/CW
1000 Memory Channels (50 x 20) • Computer Interface
Ferrite Rod Antenna for below 2MHz • Selectable Step Size

ATLANTIC HAM RADIO Ltd.
(416) 636-3636 — 368 Wilson Ave
(416) 631-0747 fax — Downsview, ON
All U.S. Orders Shipped UPS Air — Canada M3H 1S9

FREE SAMPLE COPY!



ANTIQUE RADIO CLASSIFIED
Antique Radio's Largest-Circulation Monthly Magazine
Articles - Classifieds - Ads for Parts & Services
Also: Early TV, Ham Equip., Books, Telegraph, 40's & 50's Radios & more...
Free 20-word ad each month. Don't miss out!
1-Year: $34.95 ($51.95 by 1st Class)
6-Month Trial - $17.95. Foreign - Write.
A.R.C., P.O. Box 802-T10, Carlisle, MA 01741
Or Call: (508) 371-0512

King of the Hill
SPECTRA Scanner Antenna
Proclaimed "King of the Hill" in a Monitoring Times review, the 4-band SPECTRA brings unparalleled VHF-Low, VHF-High, UHF, and 800-1000mHz reception. Used by news networks, state & federal agencies! **$79.99** +$6.49 S&H
1-800-950-WARE
RADIOWARE
PO Box 1478 Westford MA 01886
Write for FREE Catalog!

CIRCLE 80 ON READER SERVICE CARD

CB'ers Order New Tricks III CB Books
Shows Tune Ups In CB's, Amplifiers, Export CB's.
ONLY $19.95
Medicine Man CB
P.O. Box 37, Clarksville, AR 72830
Send $19.95 with order

CIRCLE 71 ON READER SERVICE CARD

CANADIANS ONLY!
NEW 50 PAGE '96 GIANT CB CATALOG IS COMING SOON. ORDER NOW AND WE'LL SEND YOUR OUR '95 CATALOG PLUS WE'LL SEND YOU OUR NEW CATALOG AS SOON AS IT'S READY. ONLY $3.00.
• CB RADIOS • MARINE RADIOS
• SCANNERS • AMATEUR GEAR
Durham Radio Sales & Service Inc.
350 Wentworth St. E., Oshawa, Ont. L1H 7R7
Ph: (905)436-2100 Fax: 436-3231 Web: durhamnet.com

Weather Satellite Imagery

PCMCIA Convertible Capture Board
- Low power - PCMCIA type II
- Use on your Laptop and Desktop
- HF Marine, NOAA polar satellites, GOES satellites
- Perfect for boat, vehicle, plane, or home

Full Function Software
- DOS and Windows
- Sea surface temperatures
- Coastline and Lat/Lon grids
- GOES animation
- Decodes WEFAX headers

The Best in PC Based Weather Satellite Imagery
OFS WeatherFAX
High Performance Satellite Weather Facsimile

OFS WeatherFAX, Phone/Fax: (919)847-4545
6404 Lakerest Court, Raleigh, NC 27612

212-925-7000

SHORTWAVE RECEIVERS, HAM RADIOS, BOOKS ANTENNAS, SCANNERS, Business Radios.
***MOTOROLA*, ICOM, YAESU, KENWOOD, SONY GRUNDIG, UNIDEN, ANTENNAS, ETC.**
. . . our 45th Year . . . Worldwide shipping.
Sales . . . Service. Large Showroom. Open 7 days.

Barry Electronics Corp.
WORLD WIDE AMATEUR RADIO SINCE 1950
Your one source for all Radio Equipment!

1-800-990-2929
Fax 212-925-7001
540 Broadway, NYC, NY 10012

CIRCLE 55 ON READER SERVICE CARD

The World Scanner Report

publishes 10/yr for casual & expert radioists who are committed to

BBS/FAX: (619) 578-9247 *Voice only 1:30pm-3:30pm, PST*
E-Mail: bcheek@cts.com Compuserve: 76107,1176

excellence in the pursuit of VHF-UHF scanning • Edited and published by Bill Cheek, author of ***The Ultimate Scanner*** and the ***Scanner Modification Handbooks*.** • SASE or 2 IRC for info
US Funds: $5/ea; $35/yr; Canada & all foreign surface +25%; MC/VISA ok
COMMtronics Engineering .Box 262478 .San Diego, CA 92196

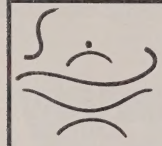
CIRCLE 57 ON READER SERVICE CARD

DISCOUNT RADIO

SANGEAN, PANASONIC, SONY, UNIDEN, BLACK BOX, SELECT-A-TENNA, PALOMAR ENGINEERS, BEL-TRONICS - Super low pricing on name brand UHF/VHF scanners, shortwave receivers, and auto radar/laser detectors. New catalog.
SALE: Sangean ATS-818CS Receiver $209.00 + $8 S/H
G.E Superadio III AM/FM $59.95 + $8 S/H
Write or Call (818) 780-2730

CHILTON PACIFIC LTD.
5632 Van Nuys Blvd., #222A
Van Nuys, CA 91401 USA

CRYSTAL CONTROLLED
SURVEILLANCE
VHF & UHF PROFESSIONAL ENCASED PARTIALLY ASSEMBLED TRANSMITTER KITS
Countersurveillance. Also Tunable 70 to 305 MHz Kits. We Design & Manufacture Our Equipment. Custom Design.
FOR CATALOG SEND $2.00 TO:
SHEFFIELD ELECTRONICS CO., P.O. Box 377940-S
Chicago, IL 60637-7940, Tel. (312) 324-2196



GEnie® The most fun you can have with your radio on!

No other online service serves the radio hobbyist like GEnie's Radio & Electronics RoundTable does. Scanning, shortwave, ham radio, even an online callsign database so you can look up QSL info in an instant! And we have it all at one of the lowest connect time rates of all the major online services

To sign up for GEnie with your computer & modem, dial toll free in the U.S. or Canada 1-800-638-8369.

At the **U#=** prompt, type **JOINGENIE**

And for a special introductory offer, At the **key/offer code** prompt type **MEG528**

CIRCLE 92 ON READER SERVICE CARD

Advertisers' Index

AMC Sales, Inc. 19
AOR, LTD. ....Cov II
ARRL 29,39
Ace Communications. ....Cov III
Alpha Delta Communications, Inc. 66
Antenna Supermarket 57
Antique Radio Classified 91
Atlantic Ham Radio 91
BCB 87
Barry Electronics 92
C. Crane Company 88
CB City International, Inc. 22
CB Radio Buyer's Guide 90
CQ Books & Videos 54,55
CRB Research 83,90
Cellular Security Group 35
Chilton Pacific Limited 92
COMMtronics Engineering 92
Communications Electronics, Inc. 41
Computer Aided Technologies 35,43,47
Copper Electronics 89
DECO 28
Davis Instruments 22
Delta Research 25
Drake, R.L. Company 13,27
Durham Radio Sales & Service, Inc. 91
EDCO 7,11,25,69,73,83
Electronic Equipment Bank 1
Firestik Antenna Company 88
GAP Antenna Products, Inc. 80
GEnie Radio & Electronics RoundTable 92
GMRS Radio Sales 78
Gilfer Shortwave 6
Grove Enterprises 37
Hollins Radio Data 85
ICOM America, Inc. ....48,Cov IV
Index Publishing Group, Inc. 28
Jo Gunn Enterprises 19
K & L Technology 73
Lentini Communications, Inc. 69
MFJ Enterprises, Inc. 45
Medicine Man CB 91
Microcraft Corporation 88
MoTron Electronics 10
OFS WeatherFAX 91
Optoelectronics, Inc. 15,63
Passport To Worldband Radio 4
Philips-Tech Electronics 88
Precision Electronics 87
R.C. Distributing 22,48
REACT International 84
Radio Bookstore 25
Radioware Corporation 91
SIRIO Antenne S.r.l. 65
Scanner Master 23
Scanner World USA 79
Scrambling News 48
Sheffield Electronics Co. 92
Signal Intelligence 23
Software Systems Consulting 37
Spectrum International, Inc. 73
TRA Communications Consultants, Inc. 88
Timestep 73
Tucker Electronics 16
U.S. Scanner Publications 33
USRadio 43
Universal Radio, Inc. 3
Viking International 51
Wilson Antenna, Inc. 51
World Radio TV Handbook 30
Xandi Electronics 87

Reach this dynamic audience with your advertising message, contact Don Allen, N9ALK at 217-344-8653, FAX 217-344-8656

CB LINEAR Mobile amplifier. TNT-Eagle 200, three stage, AM/SSB bi-linear, 200 watts AM/key, 285 watts SSB, 20 dB receive pre-amp, auto SSB switching. New in box, $165, plus shipping. (301) 559-5640

TODAY'S ELECTRONICS. Don't get left behind! Top home-study courses developed by U.S. Military. Free catalog. Federal Technical Publishers, Box 1218P, Glen Lake, MN 55345.

PROBE. Fastest scanning speed! Ultimate software for Optoelectronic's **OptoScan**. Free details. **DataFile Inc.**, Box 20111, St. Louis, MO 63123. Internet: DataFile@GEnie.com.

BUSINESSES YOU CAN ACCEPT CHECKS BY PHONE OR FAX TO ACCOMMODATE ORDERS FROM NON-CREDIT CARD HOLDERS. FOR DETAILS CALL (913) 437-2075 AND LEAVE YOUR FAX NUMBER.

AR8000/PRO43 Bound Frequency Assignment Logs. 5 1/2 x 8 1/2. Specify which booklet. 1/$8.50. 2/$14.00. Custom quotes. To: A. Wilde, P.O. Box 708, W. Acton, MA 01720.

FM BROADCASTING: Transmit many miles, stereo/mono 88-108 MHz. R.F. amps. Kit or assembled, full info, call 24 hours. R. Scott Communications, (604) 642-2859.

R390A SALES & SERVICE. Info SASE Miltronix POB 80041, Toledo, OH 43608. R-390 Power input cables, $25. Antenna connectors, $12.50. External AGC mod, $20. ppd. Mon-Fri, 9 a.m.-6 p.m., EST. (419) 255-6220.

GREAT READING for the winter SWL season—wonderful; (and inexpensive!) back issues of "Popular Communications"—the first 8 1/2 years (over 100 issues), all excellent in binders—$199 takes all! Ted Osborn, Box 71, Ithaca, NY 14851; (607) 273-5323.

AM RADIO CLUB. For bulletin sample and membership info write International Radio Club of America, Box 1831, Perris, CA 92572.

POP'COMM Sept. 1982 thru Dec. 1994, $225 plus postage. K. Wattelet, Box 1712, San Luis Obispo, CA 93406.

ILLINOIS SCANNER BUFFS. Subscribe to Scanning Illinois, monthly newsletter for Illinois, 2-3 pages of frequencies, public safety news, and more. $12, 12 issues. Send to: Alex Blaha, 2054 Hawthorne, Joliet, IL 60435.

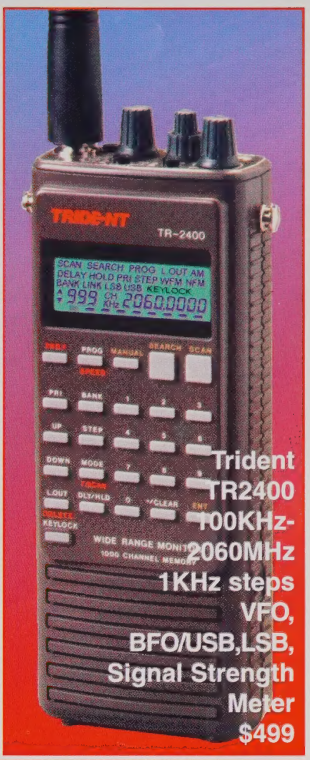
NEWS, SPORTS, uninterrupted music, radio reading are available on SCA subcarriers. SAP offers weather, TV related audio and radio reading. $1 for catalog AJL Enterprises, P.O. Box 5354 High Point, NC 27262.

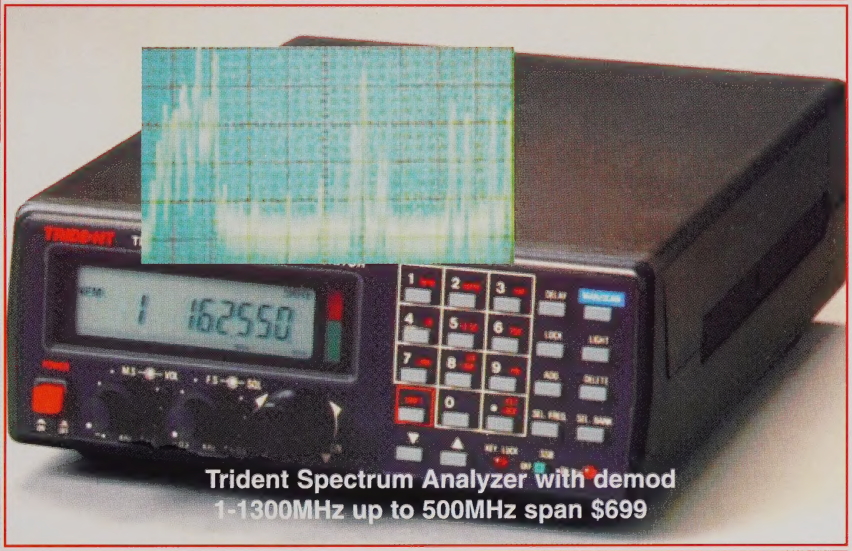
FOR SALE: ICOM R-1 full coverage, complete with BP-90. Excellent condition., $350. Jim, (810) 634-8099.

RESTRICTED Top Secret Hacker Information. Cellular/Cable/Surveillance/Satellite/VideoCipher/Books/Videos—Software. Make $100/hour! Catalog—$3. **TELECODE**, P.O. Box 6426-PC, Yuma, AZ 85366-6426.

FOR SALE: Radio Shack TRC-465 40-channel AM/SSB mobile transceiver. Like new with antenna. (608) 326-6421. Ask for Jeff.

UNIDEN 760-XLT for sale. Unblocked. RF amp and CTCSS built-in, AC/DC power cords, mobile mounting bracket. Has TCF-3 Tone/Code finder attached. Decodes all CTCSS and DCS tones on large LED display. Computer controlled, RS-232 port on rear. Includes manual and software. Like new. $600. Rob, (609) 786-7581.





Tech Support 317-845-7436

1 800 445 7717

Faxback Service 317-849-8683

10707 East 106th Street Fishers, IN 46038

Fax 317-849-8794

E Mail: ACESCANS@aol.com

Computer BBS 317-579-2045

Call about these and a host of other radio receivers and accessories from anywhere in the world, 24 hours a day, 7 days a week. For computer users, our BBS offers free product and frequency information, or use our faxback service for instant specs and info. So call us now, we'll give you the benefit of our over 20 years experience with radio receivers. Mastercard, Visa, AMEX, Discover, Government & Corporate P.O's. plus COD. Price/specs/availability subject to change. Free trial period on all units. All units carry full factory warranty. IN residents add Tax. Flat rate ground shipping, $6.95. Air Freight for as little as $10.95 per unit for most locations. All trademarks property of their respective owners. Products are made or licensed under a variety of patents, write for details. Call to confirm price and delivery before ordering.

DISCOVER ACE MasterCard VISA

CIRCLE 15 ON READER SERVICE CARD

ICOM
THE NEXT GENERATION

IC-775DSP
Pull out signals no one else can!

- New ICOM DSP technology
- MOS FET PA with 200 watts
- Built-in power supply & antenna tuner
- Dual receivers with independent dials and lock
- DDS (Direct Digital Synthesis)
- Advanced interference rejection features, twin PBT, IF notch, the works!

IC-736/IC-738
Expand your HF horizons

- IC-736—HF, 6M, built-in power supply
- IC-738—HF, DC power supply required
- New DDS (Direct Digital Synthesis)
- 100 watts SSB, CW, FM / 40 watts AM
- High speed automatic tuner
- 100% full duty cycle (IC-736)
- Quick-split operation

IC-2350H*
Mobile 2M (50W)+440 (35W)

- Wide band Rx (118–174 MHz)
- Independent tuning knobs
- 100 memory channels
- Remote control mic (opt. UT-101)
- Tone scan (optional UT-89)

NEW!

IC-706*
World's smallest HF/VHF all-mode transceiver!

100W on HF & 6M and 10W on 2M!

- General Coverage Receiver
- Removable, remoteable front panel allows control of all features
- Large LCD display featuring alphanumeric memory names and soft key descriptions
- User friendly design with big, easy to control dials
- First ever! Nothing else like it!

IC-2000H
Superior wideband reception (118 – 174 MHz)!

- 2 meter FM mobile 50 Watts
- Large alphanumeric display
- 50 memory channels
- Alphanumeric ID
- Rugged aluminum frame

IC-W31A/IC-Z1A
Powerful new dual banders

- IC-Z1A comes with a radical new removable remote control panel
- Alphanumeric memory display, message and paging
- Independent tuning knobs
- Compact design
- Backlit display and keypad

IC-T22A/IC-T42A
Shirt pocket small, ultra-slim and BIG crisp audio

- 5 watts of power (at 13.5V DC)
- 40 memory channels with auto "log-in" feature
- Direct 12V operation (4.5-16 volts)
- Affordable price

Call ICOM's brochure hotline for more info: (206) 450-6088. Or contact ICOM Technical Support in the HamNet forum on CompuServe @75540,525 (Internet: 75540.525 @ compuserve.com) *IC-706 available September 1995, IC-2350H available October 1995. ©1995 ICOM America, Inc., 2380-116th Ave., N.E. Bellevue, WA 98004. The ICOM logo is a registered trademark of ICOM, Inc. All stated specifications are subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. CompuServe is a registered trademark of CompuServe, Incorporated, an H&R Block Company. DAYTON895Y

ICOM

ICOM THE NEXT GENERATION

CIRCLE 122 ON READER SERVICE CARD